PIONEER®
The Art of Entertainment

Service Manual

ORDER NO.
ARP2617

CD AUTOCHANGER
CAC-V3200
KUC

● Refer to the service manual ARP2570 for CAC–V3000.

● This manual is applicable to CAC–V3200/KUC.

CONTRAST OF MISCELLANEOUS PARTS

NOTES:
- *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Parts marked by "◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*

CAC–V3200 and CAC–V3000 have the same construction except for the following :

Mark	Symbol & Description	Part No.		Remarks
		CAC–V3000	CAC–V3200	
	Top panel	DNH1687	DNH1799	
	Side panel	DNH1693	DNH1800	
	Door sash	DNH1697	DNH1801	
	Door L	DNH1771	DNH1802	
	Door escutcheon (Upper)	DNK2419	DNK2439	
	Door escutcheon (Lower)	DNK2420	DNK2440	
	Decorative panel (Upper)	DNK2421	DNK2693	
	Decorative panel (Lower)	DNK2422	DNK2694	
	Door decorative panel	DNK2423	DNK2695	
	Door (R) assembly	DXB1436	DXB1439	
	Packing case	DHG1387	DHG1491	
	Operating instructions (English)	DRB1093	DRB1129	

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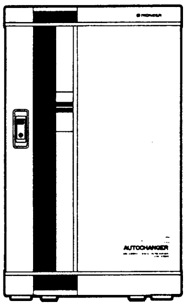
DFI DEC. 1992 Printed in Japan

Service Manual

PIONEER
The Art of Entertainment



ORDER NO.
ARP2570

CD AUTOCHANGER
CAC-V3000

CAC – V3000 HAS THE FOLLOWING :

Type	Power Requirement	Remarks
HEM	AC220V – 230V, 240V (Switchable)	
KUC	AC120V only	

- **This manual is applicable to CAC – V3000/HEM and KUC.**
- **For KUC type, refer to page 175.**
- **Ce manuel pour le service comprend les explications de réglage en français.**
- **Este manual de servicio trata del método ajuste escrito en español.**

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1. SAFETY INFORMATION

This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.
Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

WARNING

Lead in solder used in this product is listed by the California Health and Welfare agency as a known reproductive toxicant which may cause birth defects or other reproductive harm (California Health & Safety Code, Section 25249.5).
When servicing or handling circuit boards and other components which contain lead in solder, avoid unprotected skin contact with the solder. Also, when soldering do not inhale any smoke or fumes produced.

NOTICE
(FOR CANADIAN MODEL ONLY)
Fuse symbols -▮▭⊞- (fast operating fuse) and/or -▮▭⊠- (slow operating fuse) on PCB indicate that replacement parts must be of identical designation.

REMARQUE
(POUR MODÈLE CANADIEN SEULEMENT)
Les symboles de fusible -▮▭⊞- (fusible de type rapide) et/ou -▮▭⊠- (fusible de type lent) sur CCI indiquent que les pièces de remplacement doivent avoir la même désignation.

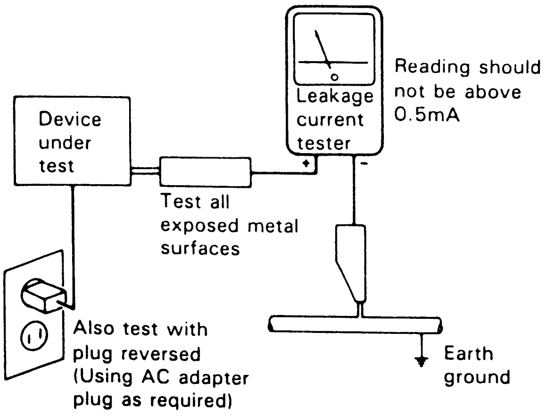
(FOR USA MODEL ONLY)

1. SAFETY PRECAUTIONS

The following check should be performed for the continued protection of the customer and service technician.

LEAKAGE CURRENT CHECK

Measure leakage current to a known earth ground (water pipe, conduit, etc.) by connecting a leakage current tester such as Simpson Model 229-2 or equivalent between the earth ground and all exposed metal parts of the appliance (input/output terminals, screwheads, metal overlays, control shaft, etc.). Plug the AC line cord of the appliance directly into a 120V AC 60Hz outlet and turn the AC power switch on. Any current measured must not exceed 0.5mA.


Reading should not be above 0.5mA
Leakage current tester
Device under test
Test all exposed metal surfaces
Also test with plug reversed (Using AC adapter plug as required)
Earth ground

AC Leakage Test

ANY MEASUREMENTS NOT WITHIN THE LIMITS OUTLINED ABOVE ARE INDICATIVE OF A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

2. PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in the appliance have special safety related characteristics. These are often not evident from visual inspection nor the protection afforded by them necessarily can be obtained by using replacement components rated for voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this Service Manual.

Electrical components having such features are identified by marking with a ⚠ on the schematics and on the parts list in this Service Manual.
The use of a substitute replacement component which dose not have the same safety characteristics as the PIONEER recommended replacement one, shown in the parts list in this Service Manual, may create shock, fire, or other hazards.

Product Safety is continuously under review and new instructions are issued from time to time. For the latest information, always consult the current PIONEER Service Manual. A subscription to, or additional copies of, PIONEER Service Manual may be obtained at a nominal charge from PIONEER.

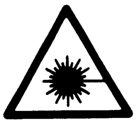
2. LABEL CHECK

(FOR EUROPEAN MODEL ONLY)

VARO!
AVATTAESSA JA SUOJALUKITUS OHITETTAESSA OLET ALTTIINA NÄKYMÄTTÖMÄLLE LASERSÄTEILYLLE. ÄLÄ KATSO SÄTEESEEN.

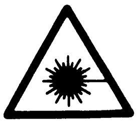
ADVERSEL:
USYNLIG LASERSTRÅLING VED ÅBNING NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION UNDGÅ UDSAETTELSE FOR STRÅLING.

VARNING!
OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD OCH SPÄRREN ÄR URKOPPLAD. BETRAKTA EJ STRÅLEN.



LASER
Kuva 1
Lasersateilyn varoitusmerkki

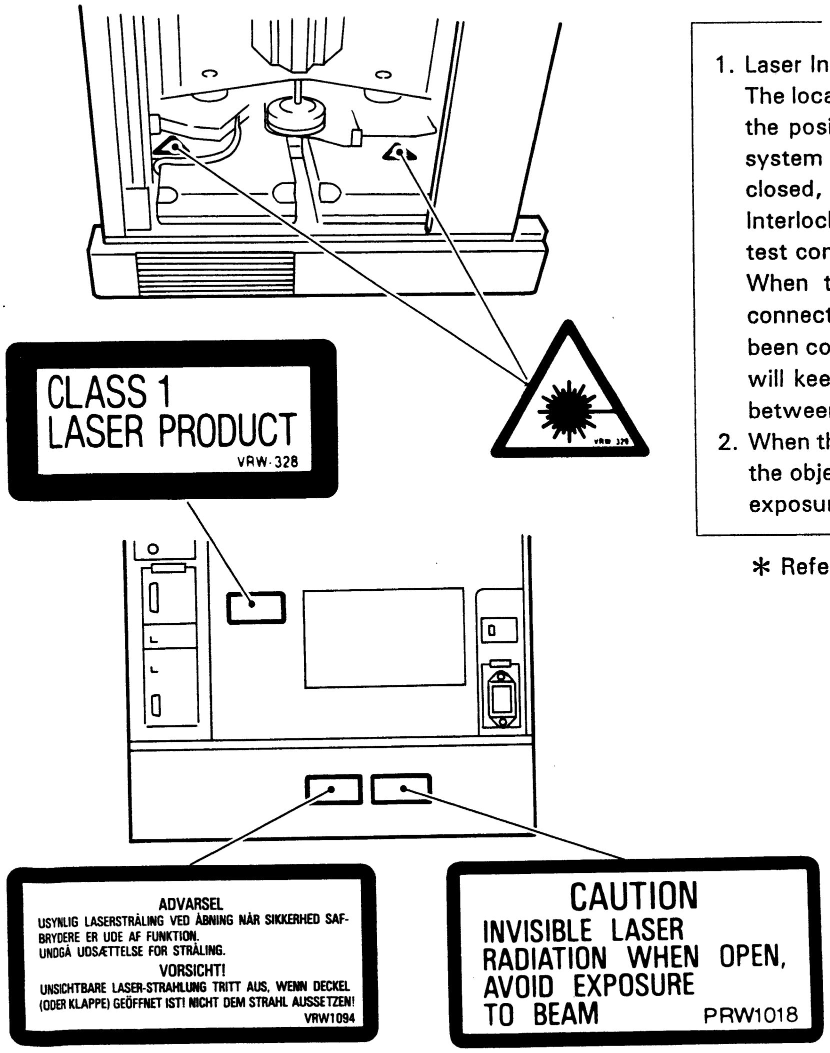
WARNING!
DEVICE INCLUDES LASER DIODE WHICH EMITS INVISIBLE INFRARED RADIATION WHICH IS DANGEROUS TO EYES. THERE IS A WARNING SIGN ACCORDING TO PICTURE 1 INSIDE THE DEVICE CLOSE TO THE LASER DIODE.



LASER
Picture 1
Warning sign for laser radiation

IMPORTANT
THIS PIONEER APPARATUS CONTAINS LASER OF CLASS 1.
SERVICING OPERATION OF THE APPARATUS SHOULD BE DONE BY A SPECIALLY INSTRUCTED PERSON.

LASER DIODE CHARACTERISTICS
MAXIMUM OUTPUT POWER: 5 mw
WAVELENGTH: 780-785 nm



CLASS 1
LASER PRODUCT
VRW-328

ADVARSEL
USYNLIG LASERSTRÅLING VED ÅBNING NÅR SIKKERHED SAF-BRYDERE ER UDE AF FUNKTION.
UNDGÅ UDSÆTTELSE FOR STRÅLING.
VORSICHT!
UNSICHTBARE LASER-STRAHLUNG TRITT AUS, WENN DECKEL (ODER KLAPPE) GEÖFFNET IST! NICHT DEM STRAHL AUSSETZEN!
VRW1094

CAUTION
INVISIBLE LASER RADIATION WHEN OPEN, AVOID EXPOSURE TO BEAM
PRW1018

Additional Laser Caution

1. Laser Interlock Mechanism
   The location of the switch (S6 – 8) which examines the position of the clamp is detected by the main system micro-computer. When the clamp is not closed, the laser diode will stop oscillating. The Interlock Mechanism will not operate when in the test command*.
   When the 2, 3 pin of the CXA1471S (IC1) is connected to the GND, or when the 20 pin has been connected to High Level (ON), the laser diode will keep oscillating in the event of a short circuit between any of the Q1 terminals (fault condition).
2. When the CDP is being retrieved, looking directly at the objective lens from a short distance can lead to exposure to beams from the Class 1 laser.

* Refer to page 110.

3. PARTS LOCATION

Note:
When ordering service parts, be sure to refer to "PARTS LIST of EXPLODED VIEWS" or "PCB PARTS LIST".

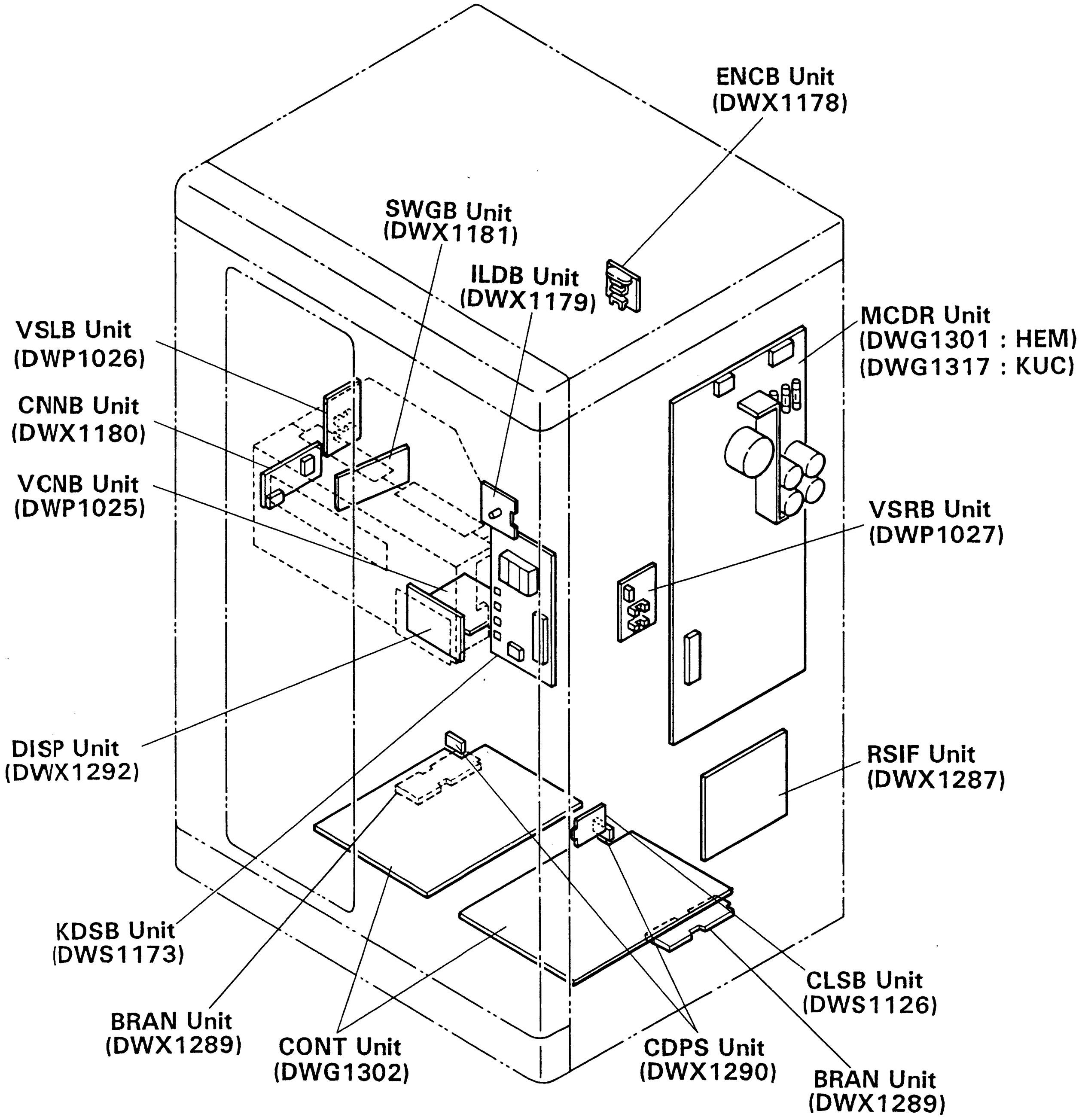
■ SEPARATE UNIT NAMES

This manual uses the following abbreviations for P. C. Board names :

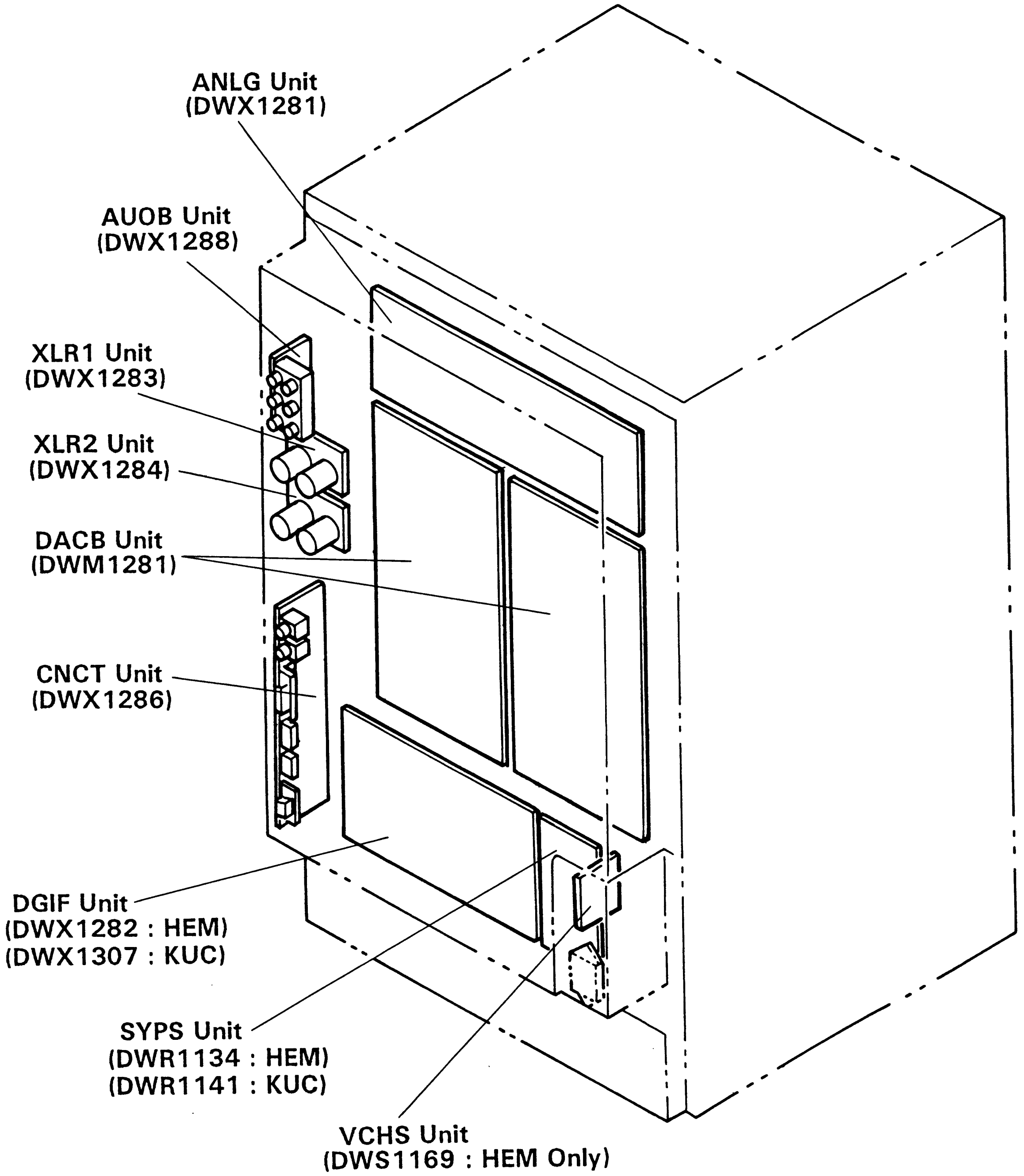
CAC-V3000

- DACB Unit (DWM1281) ······ D/A Converter Board Unit
- MOTHER Unit
  - SYPS Unit (DWR1134 : HEM) (DWR1141 : KUC) ······ System Power Supply Board Unit
  - VCHS Unit (DWS1169 : HEM Only) ······ Voltage Change Switch Board Unit
  - ANLG Unit (DWX1281) ······ Analog Audio Board Unit
  - DGIF Unit (DWX1282 : HEM) (DWX1307 : KUC) ······ Digital Interface Board Unit
  - XLR1 Unit (DWX1283) ······ XLR Connector 1 Board Unit
  - XLR2 Unit (DWX1284) ······ XLR Connector 2 Board Unit
  - CNCT Unit (DWX1286) ······ System Connector Board Unit
  - RSIF Unit (DWX1287) ······ RS-232C & 422A Interface Board Unit
  - AUOB Unit (DWX1288) ······ Audio Output Board Unit
- MAIN Unit
  - MCDR Unit (DWG1301 : HEM) (DWG1317 : KUC) ······ Main Control & Motor Drive Board Unit
  - CLSB Unit (DWS1126) ······ Clamp Switch Board Unit
  - KDSB Unit (DWS1173) ······ Key & Display Board Unit
  - ENCB Unit (DWX1178) ······ Encoder Board Unit
  - ILDB Unit (DWX1179) ······ Illumination LED Board Unit
- VHIF Unit
  - VCNB Unit (DWP1025) ······ Vertical Control Board Unit
  - VSLB Unit (DWP1026) ······ Vertical Sensor Left Board Unit
  - VSRB Unit (DWP1027) ······ Vertical Sensor Right Board Unit
  - CNNB Unit (DWX1180) ······ Connection Board Unit
  - SWGB Unit (DWX1181) ······ Swing Board Unit
  - DISP Unit (DWX1292) ······ Display Board Unit
- PD-CACV3000-L [CDP-1 (L)]
  - CDPM Unit
    - CONT Unit (DWG1302) ······ CD Control Board Unit
    - CDPS Unit (DWX1290) ······ CD Power Supply Board Unit
  - BRAN Unit (DWX1289) ······ Branch Board Unit
  - Servo Mechanism Assembly
    - Pick-up Assembly (PEA1030)
- PD-CACV3000-R [CDP-2 (R)]
  - CDPM Unit
    - CONT Unit (DWG1302) ······ CD Control Board Unit
    - CDPS Unit (DWX1290) ······ CD Power Supply Board Unit
  - BRAN Unit (DWX1289) ······ Branch Board Unit
  - Servo Mechanism Assembly
    - Pick-up Assembly (PEA1030)

■ FRONT SECTION


ENCB Unit
(DWX1178)
SWGB Unit
(DWX1181)
ILDB Unit
(DWX1179)
VSLB Unit
(DWP1026)
MCDR Unit
(DWG1301 : HEM)
(DWG1317 : KUC)
CNNB Unit
(DWX1180)
VCNB Unit
(DWP1025)
VSRB Unit
(DWP1027)
DISP Unit
(DWX1292)
RSIF Unit
(DWX1287)
KDSB Unit
(DWS1173)
CLSB Unit
(DWS1126)
BRAN Unit
(DWX1289)
CONT Unit
(DWG1302)
CDPS Unit
(DWX1290)
BRAN Unit
(DWX1289)

■ REAR SECTION


ANLG Unit
(DWX1281)
AUOB Unit
(DWX1288)
XLR1 Unit
(DWX1283)
XLR2 Unit
(DWX1284)
DACB Unit
(DWM1281)
CNCT Unit
(DWX1286)
DGIF Unit
(DWX1282 : HEM)
(DWX1307 : KUC)
SYPS Unit
(DWR1134 : HEM)
(DWR1141 : KUC)
VCHS Unit
(DWS1169 : HEM Only)

4. DISASSEMBLY

4.1 PANELS AND DOOR SECTION

1. Remove the screws attaching the top plate, side panels, etc.
2. To remove the door, unscrew the door hinge A assembly from the inside of the upper part of the door and lift the door.

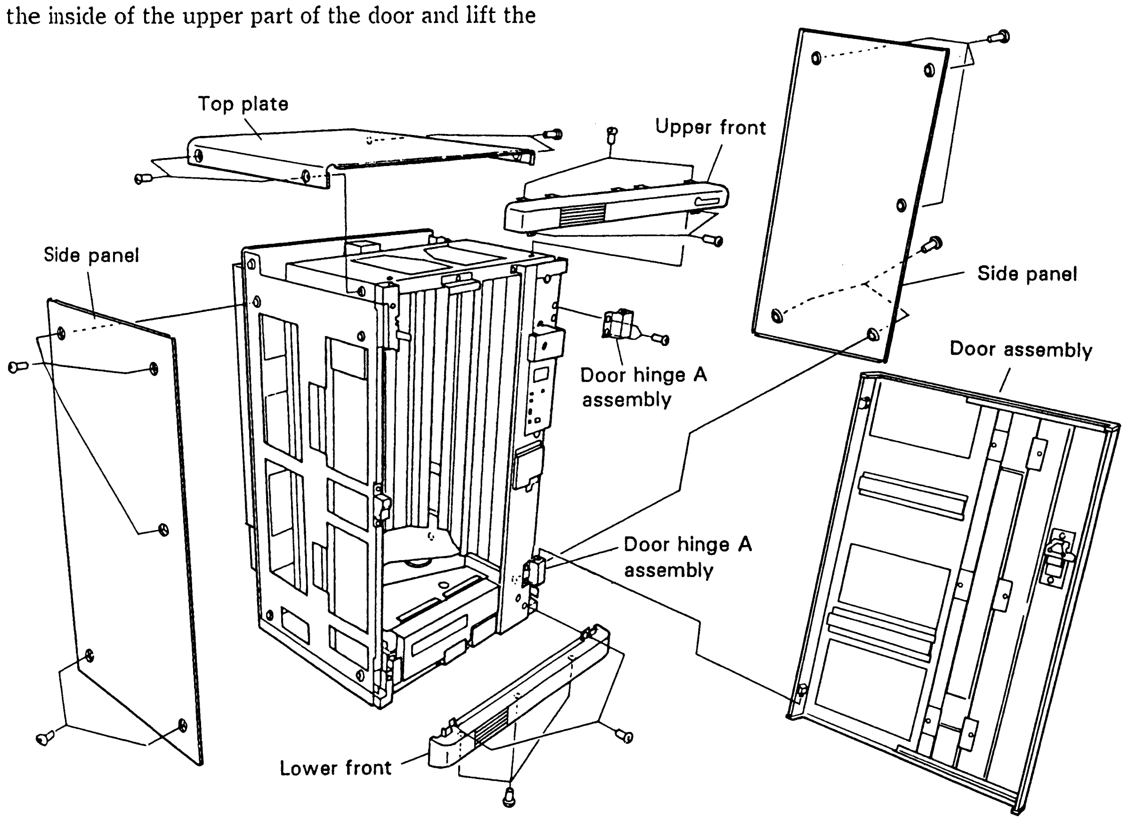

Top plate
Upper front
Side panel
Side panel
Door hinge A assembly
Door assembly
Door hinge A assembly
Lower front

Fig. 4－1 Panels and Door Section

4.2 GEARBOX SECTION

1. Remove the screws. Unfasten the VD1 belt and spring of the VD pulley side.
2. Lift the gearbox assembly.

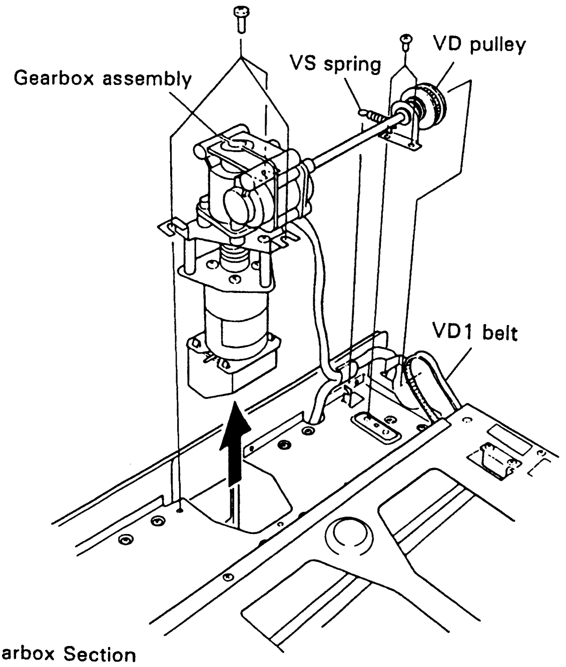

Gearbox assembly
VS spring
VD pulley
VD1 belt

Fig. 4－2 Gearbox Section

4.3 CD PLAYER SECTION

1. Remove the CDP cover from the rear bottom.
2. Loosen the screw Ⓐ of the front bottom. (Do not remove it.)
3. Remove the screw Ⓑ in the lower center of the rear side and the ground terminal screw Ⓒ of the CD player to be removed.
4. Loosen the screw Ⓓ of the CD player to be removed.
5. Pull out the CD player.

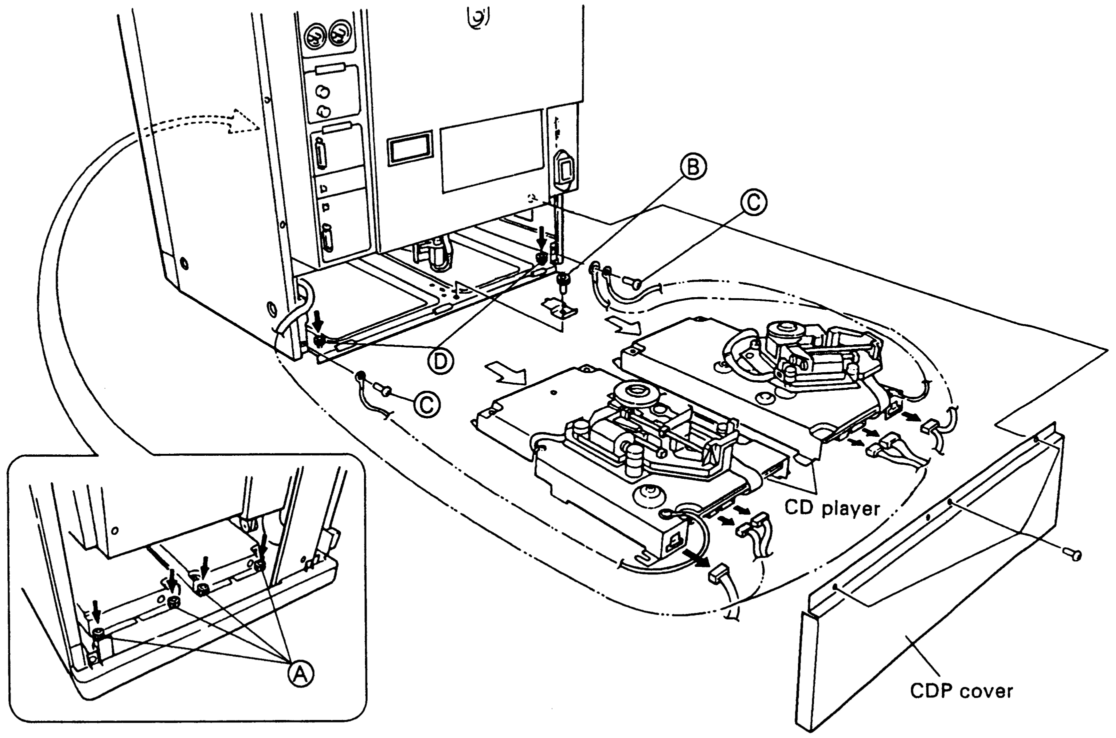

Ⓑ
Ⓒ
Ⓓ
Ⓒ
Ⓐ
CD player
CDP cover

Fig. 4－3 CD Player Section

4.4 CLAMP SECTION

Perform the following steps after removing both CD players.

1. Remove the rear panel and loosen the wires.
2. Remove the screw Ⓔ of the front bottom.
3. Remove the screw Ⓕ of the rear bottom and the plate attaching screw Ⓖ. Pull out the clamp.

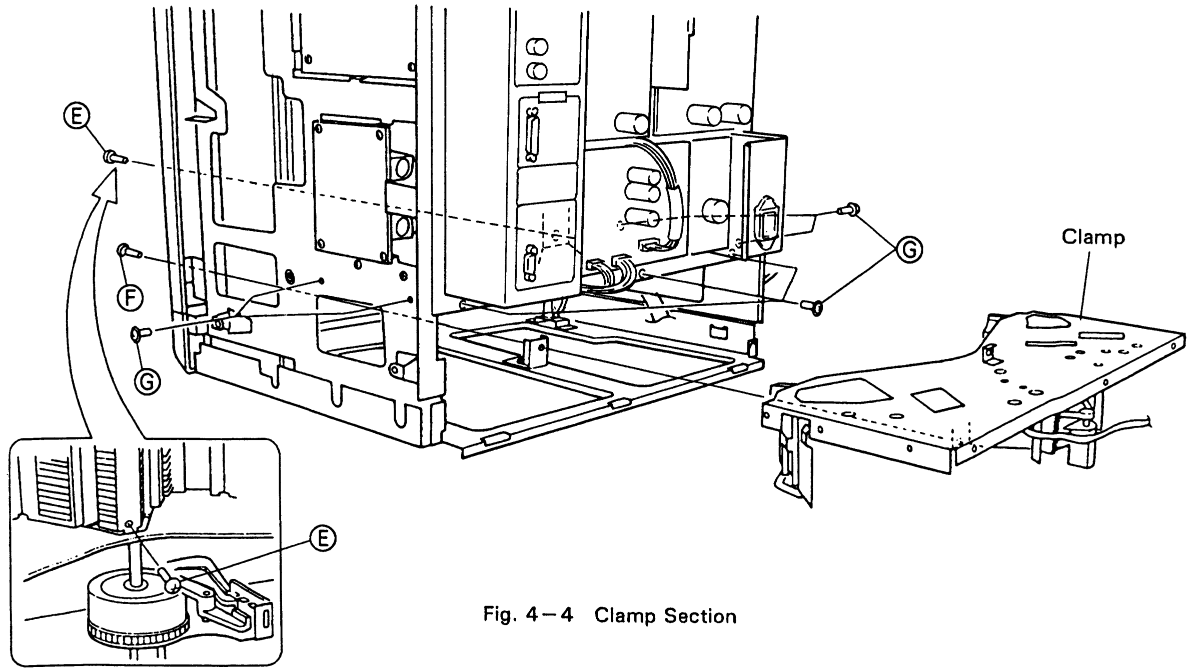


Fig. 4－4 Clamp Section

4.5 SWING ASSEMBLY SECTION

1. Remove the IL panel from the transfer mechanism assembly.
2. Remove the E washer from the swing assembly. Remove the harness from the transfer base and pull up the swing assembly.

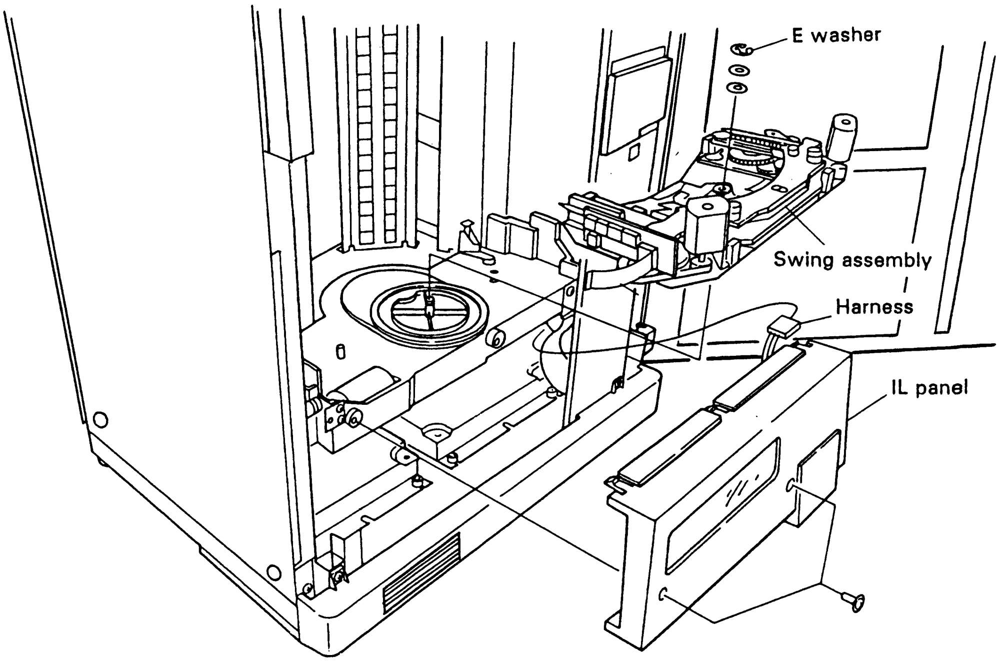

E washer
Swing assembly
Harness
IL panel

Fig. 4-5 Swing Assembly Section

4.6 SWING MOTOR ASSEMBLY (Attached under the transfer base assembly)

1. Pull out the cable from the harness guide under the transfer base assembly. Remove the supports of the harness guide from the transfer base assembly.
2. Remove the motor assembly attaching screw Ⓗ and pull out the motor assembly.

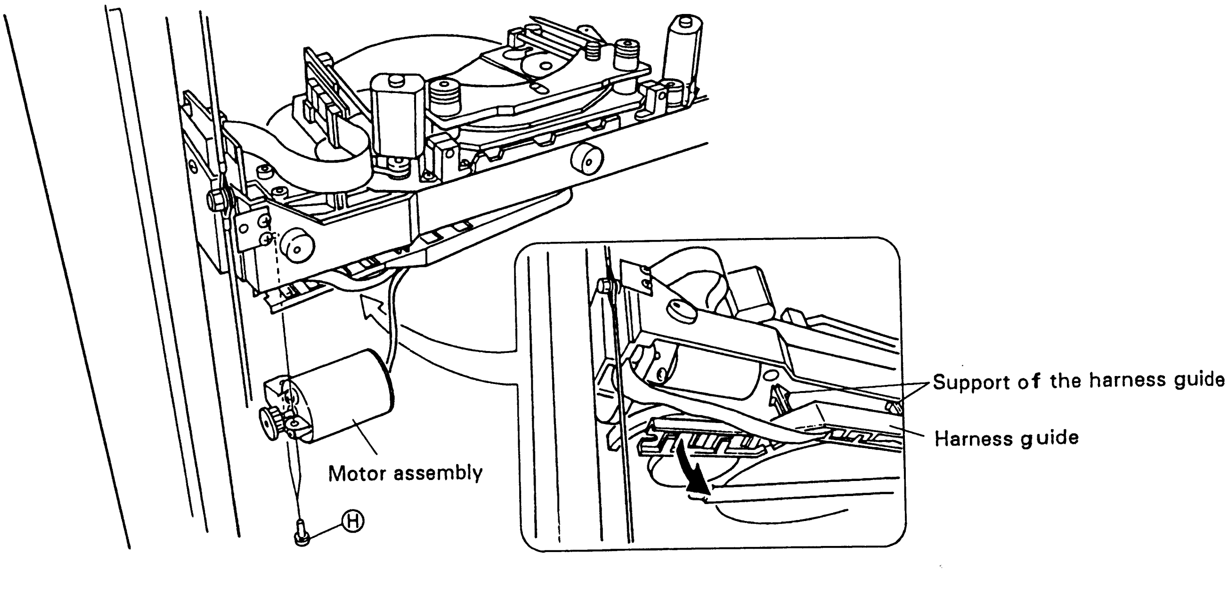

Motor assembly
Ⓗ
Support of the harness guide
Harness guide

Fig. 4-6 Swing Motor Assembly

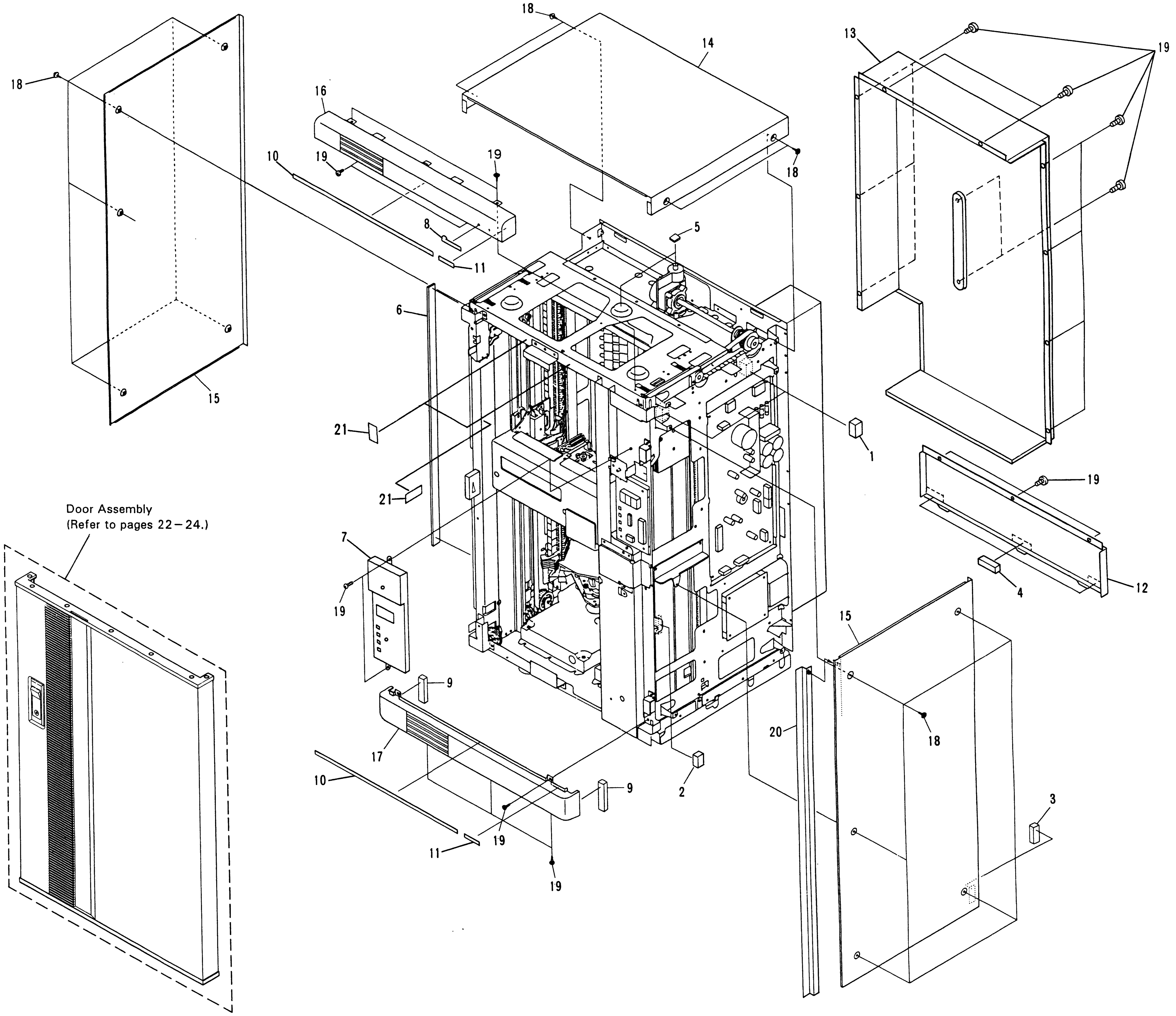
5. EXPLODED VIEWS, PACKING AND PARTS LIST

NOTES:
- *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Parts marked by "◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*

5.1 EXTERIOR

Parts list of Exterior

Mark	No.	Description	Parts No.
	1	CUSHION (A)	DEB1196
	2	CUSHION (B)	DEB1197
	3	INSECT SCREEN CUSHION (A)	DEB1198
	4	INSECT SCREEN CUSHION (B)	DEB1199
	5	DUMP CUSHION (A)	DEC1366
	6	DUMP CUSHION (B)	DEC1469
	7	MANUAL CONTROL PANEL	DNH1705
NSP	8	BADGE	DAM1043
	9	PACKING	DEB1153
	10	DOOR PACKING (L)	DEB1206
	11	DOOR PACKING (M)	DEB1208
	12	CDP COVER	DNH1456
	13	REAR COVER	DNH1681
	14	TOP PANEL	DNH1687
	15	SIDE PANEL	DNH1693
	16	DECORATIVE PANEL (UPPER)	DNK2421
	17	DEDORATIVE PANEL (LOWER)	DNK2422
	18	SCREW	IMT30P040FZK
	19	SCREW	BBT30P060FNI
	20	DOOR PACKING (R)	DEC1354
	21	HARNESS SHEET	VEX1022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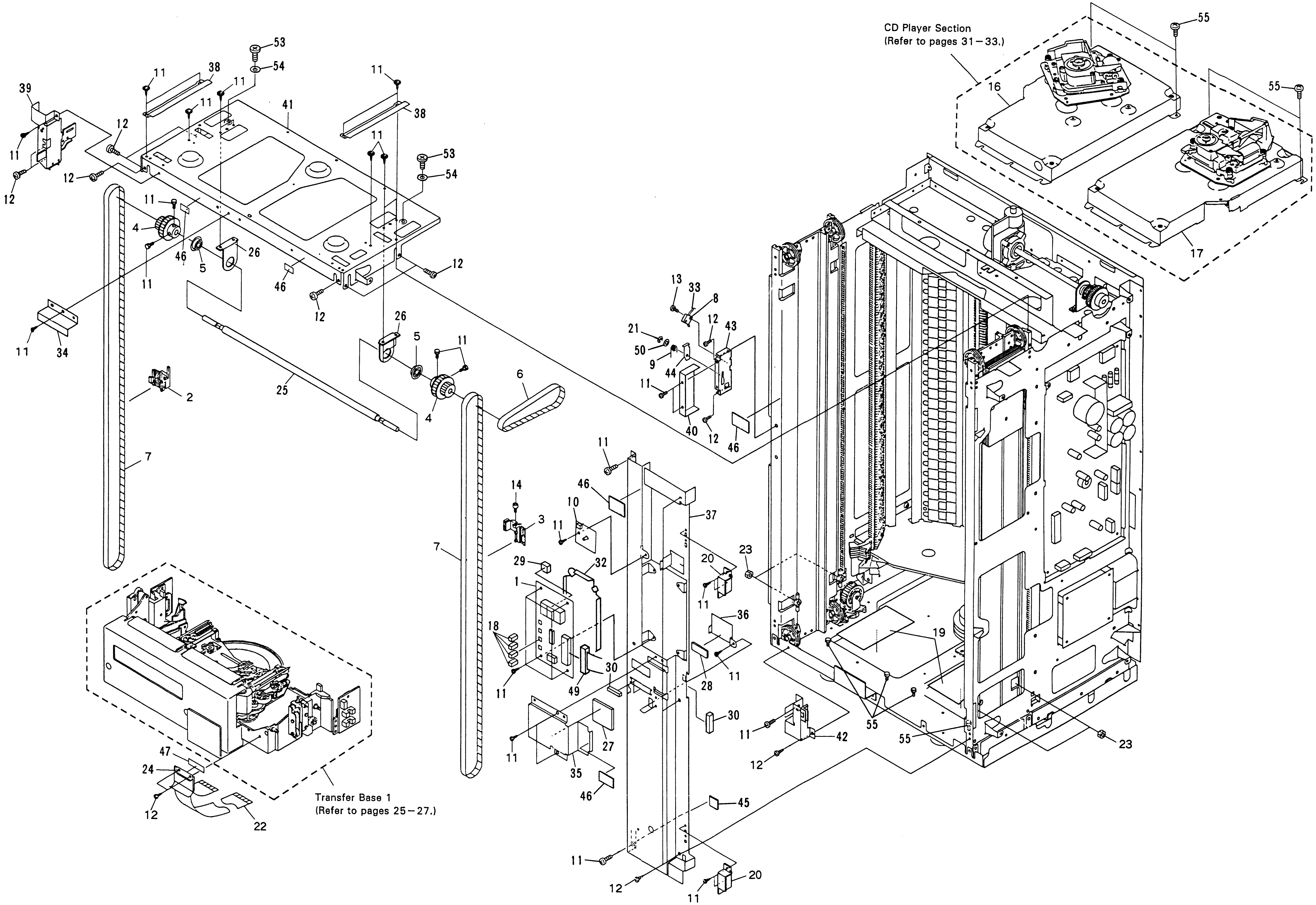
Door Assembly
(Refer to pages 22–24.)

5.2 TRANSFER BASE SECTION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53
54
55
A
B
C
D
1
2
3
4
5
6

CD Player Section
(Refer to pages 31–33.)

Transfer Base 1
(Refer to pages 25–27.)

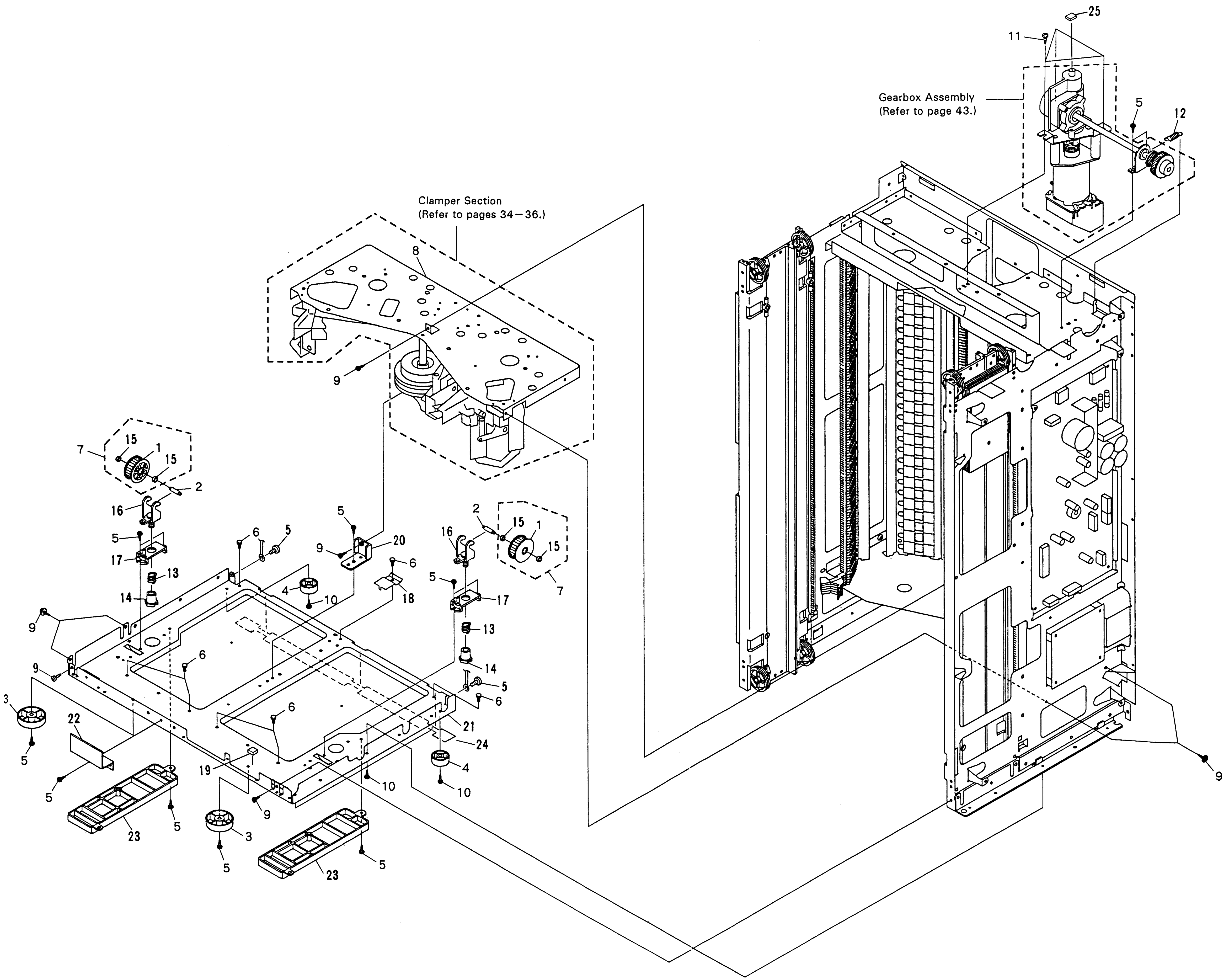
Parts list of Transfer Base Section

Mark	No.	Description	Parts No.
◉	1	KDSB UNIT	DWS1173
	2	BELT STOPPER L	DNK1855
	3	BELT STOPPER R	DNK1854
	4	VD PULLEY 1	DNK1810
	5	BEARING	DXB1157
	6	VD1 BELT	DMS1017
	7	S3M BELT 2	DMS1016
	8	SLIDE SWITCH	VSK1003
	9	DOOR SW SPRING	DBH1204
◉	10	ILDB UNIT	DWX1179
	11	SCREW	BBZ30P060FMC
	12	SCREW	AMZ30P040FMC
	13	SCREW	PMH20P080FMC
	14	SCREW	SMZ30H102FBT
	15	SCREW	BBZ30P080FZK
NSP	16	CD AUTO CHANGER PLAYER (R)	PD-CACV3000-R
NSP	17	CD AUTO CHANGER PLAYER (L)	PD-CACV3000-L
	18	PUSH BUTTON	DAC1196
	19	INSULATION SHEET	DEC1350
	20	DOOR HINGE A ASSEMBLY	DXB1288
	21	E RING	YE20FUC
	22	FLEXIBLE CORD (23P)	DDD1061
	23	NUT	NN30FUC
	24	H PLATE 6	DNH1416
	25	VD SHAFT	DLA1411
	26	VD PLATE 1	DNH1406
	27	FLEXIBLE CUSHION (A)	DEB1141
	28	FLEXIBLE CUSHION (B)	DEB1142
	29	RUBBER CUSHION	DEB1202
	30	EDGE GUARD	DEC1317
	31	EDGE GUARD SHEET	DEC1400
	32	PC BLIND (B)	DEC1476
	33	CONNECTOR ASSEMBLY	DKP2396
	34	F STAY (T)	DNH1435
	35	FLEXIBLE STOPPER	DNH1438
	36	FLEXIBLE GUARD	DNH1442
NSP	37	FRONT PLATE (R)	DNH1466
NSP	38	T PLATE	DNH1476
	39	FRONT PLATE LU	DNH1667
	40	DOOR SW COVER	DNH1689
NSP	41	TOP STAY (F)	DNH1778
	42	FRONT PLATE LD ASSEMBLY	DXB1385
	43	DOOR SW HOLDER	DXB1389
	44	DOOR SW PLATE SPRING ASSEMBLY	DXB1398
NSP	45	DUMP SHEET	VEX1021
	46	HARNESS SHEET	VEX1022
	47	FLEXIBLE CUSHION C	DEB1151
	48	AC SUB PANEL (H)	DNC1244
	49	CONNECTOR ASSEMBLY	DKP1879
	50	WASHER	WA30F120M100
⚠	51	SWITCH	DSA1012
	52	LEVER SWITCH	DSK1003
	53	SCREW	DLA1543
	54	WASHER	WB50FMC
	55	SCREW	SMZ30H060FBT

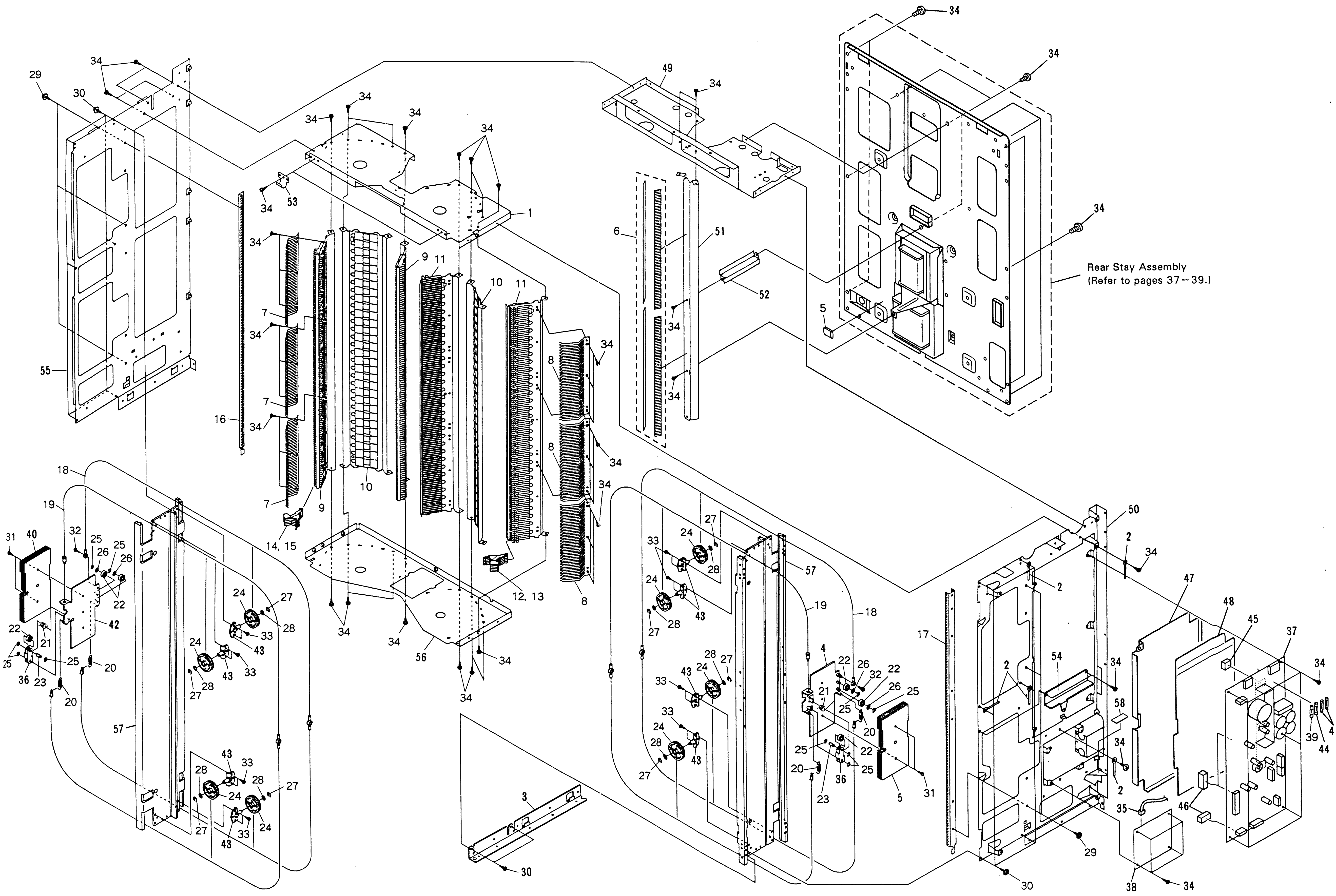
5.3 UNDER BASE SECTION

Parts list of Under Base Section

Mark	No.	Description	Parts No.
	1	VD PULLEY 2	DNK1809
	2	VD SHAFT 3	DLA1409
	3	FOOT (L)	DEC1322
	4	FOOT (S)	DEC1365
	5	SCREW	BBZ30P060FMC
	6	SCREW	SMZ30H060FBT
	7	VD PULLEY 2 ASSEMBLY	DXX1525
	8	CLAMPER ASSEMBLY	DXX1886
	9	SCREW	AMZ30P040FMC
	10	SCREW	BBZ30P080FMC
	11	SCREW	BBZ40P080FMC
	12	VS SPRING	DBH1143
	13	VD SPRING 4	DBH1139
	14	TENSION NUT	DLA1410
	15	VD BUSH	DNK1895
	16	VD BOLT 3 ASSEMBLY	DXB1254
	17	VD PLATE 5 ASSEMBLY	DXB1287
	18	CD HOLDER	DBK1044
	19	RUBBER CUSHION	DEB1144
	20	GEAR STAY (LOWER)	DNH1388
NSP	21	UNDER BASE	DNH1422
	22	F STAY U	DNH1436
	23	VD COVER	DNK2396
	24	PROTECT TAPE	DED1074
	25	DUMP CUSHION A	DEC1366


Gearbox Assembly
(Refer to page 43.)
Clamper Section
(Refer to pages 34 – 36.)

5.4 MAIN BODY SECTION


Rear Stay Assembly
(Refer to pages 37−39.)

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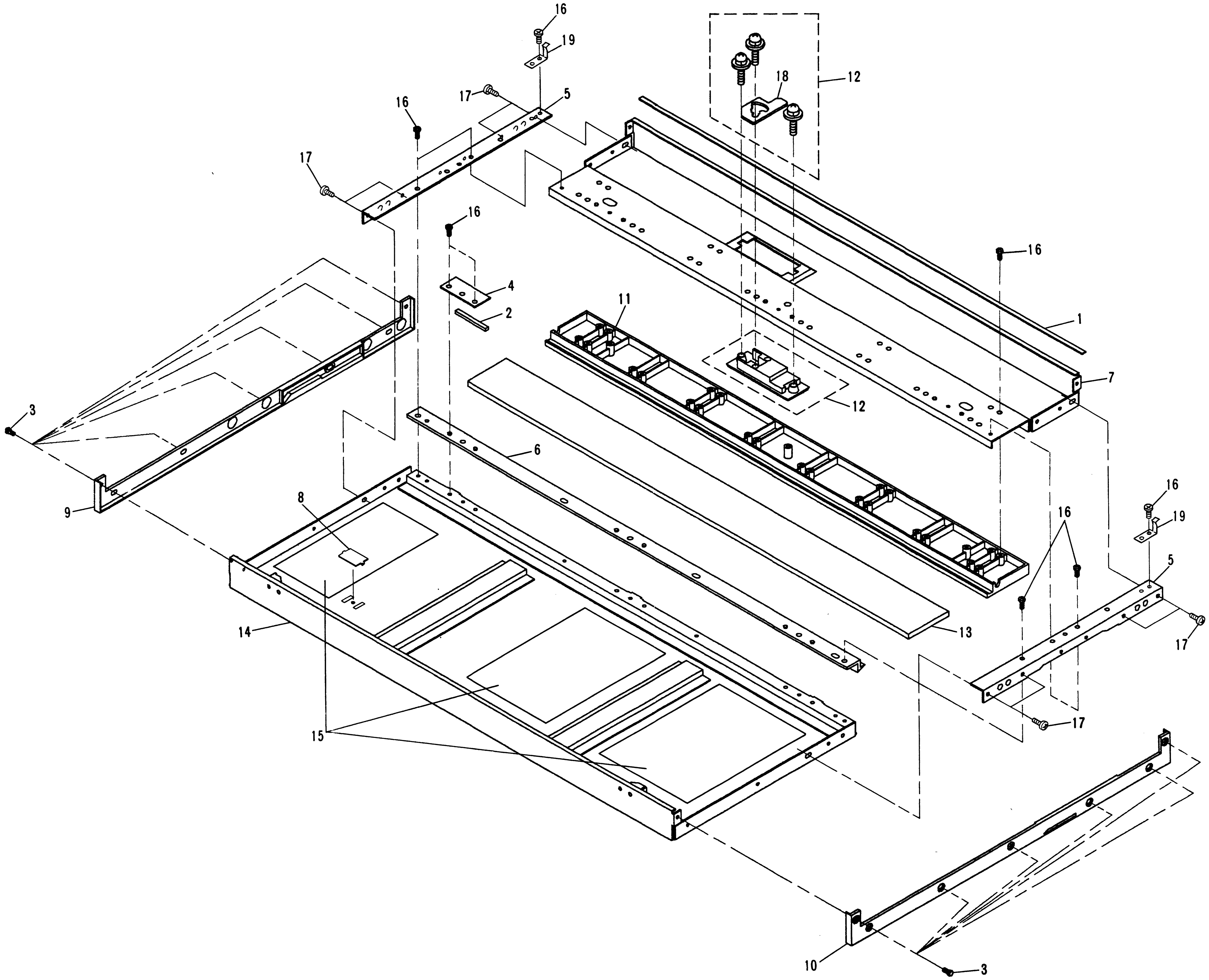
Parts list of Main Body Section

Mark	No.	Description	Parts No.
	1	D STAY (T) ASSEMBLY	DXB1396
	2	CORD CLAMPER	VNF-069
NSP	3	U ANGLE	DNH1432
	4	W PLATE 2 ASSEMBLY	DXB1257
	5	W PLAGE (R)	DNH1474
	6	DISC ADDRESS LABEL (A)	DEC1320
	7	PLATE SPRING (L)	DBK1047
	8	PLATE SPRING (R)	DBK1048
	9	RACK ASSEMBLY A (L)	DNK2070
	10	RACK ASSEMBLY B	DNK1803
	11	RACK ASSEMBLY A (R)	DNK2071
	12	D HOLDER L (WHITE)	DNK1879
	13	D HOLDER R (BLACK)	DNK1884
	14	D HOLDER R (WHITE)	DNK1878
	15	D HOLDER R (BLACK)	DNK1883
	16	VD ENCODER DISC 1	DNH1402
	17	VD ENCODER DISC 2	DNH1403
	18	WIRE ASSEMBLY (A)	DXB1264
	19	WIRE ASSEMBLY (B)	DXB1265
	20	W2 SPRING	DBH1172
	21	W1 SPRING	DBH1140
	22	WEIGHT PULLEY	DNK1840
	23	H SHAFT 9	DLA1412
	24	ROPE PULLEY	DNK1841
	25	E RING	YE25FUC
	26	WASHER	WA41D065D025
	27	E RING	YE30FUC
	28	WASHER	WA52D080D025
	29	SCREW	PMB26P040FCU
	30	SCREW	AMZ30P040FMC
	31	SCREW	CMZ30P100FMC
	32	SCREW	PMA30P040FCU
	33	SCREW	PMA30P050FMC
	34	SCREW	BBZ30P060FMC
	35	CONNECTOR ASSEMBLY	DKP2385
	36	W PLATE 4	DNH1411
◉	37	MCDR UNIT	DWG1301
◉	38	RSIF UNIT	DWX1287
⚠	39	FUSE (T5AL250V, FU5)	REK-107
	40	W PLATE L	DNH1473
⚠	41	FUSE (T2AL250V, FU2, FU3)	REK-103
	42	W PLATE 1 ASSEMBLY	DXB1256
	43	ROPE PLATE ASSEMBLY	DXB1258
⚠	44	FUSE (T800mAL250V, FU4)	REK-099
	45	RUBBER CUSHION	DEB1202
	46	RUBBER SPACER	DEB1210
	47	PC BLIND (A)	DEC1475
	48	PC BLIND (C)	DEC1573
NSP	49	TOP STAY (R)	DNH1424
NSP	50	SIDE STAY (R)	DNH1425
NSP	51	REINFORCEMENT STAY	DNH1430
	52	T STAY	DNH1431
	53	HOLDER STOPPER	DNH1462
NSP	54	S PLATE	DNH1475
NSP	55	SIDE STAY (L)	DNH1506
	56	D STAY (U)	DNH1775
NSP	57	SIDE FRAME ASSEMBLY	DXB1390
	58	HARNESS SHEET	VEX1022

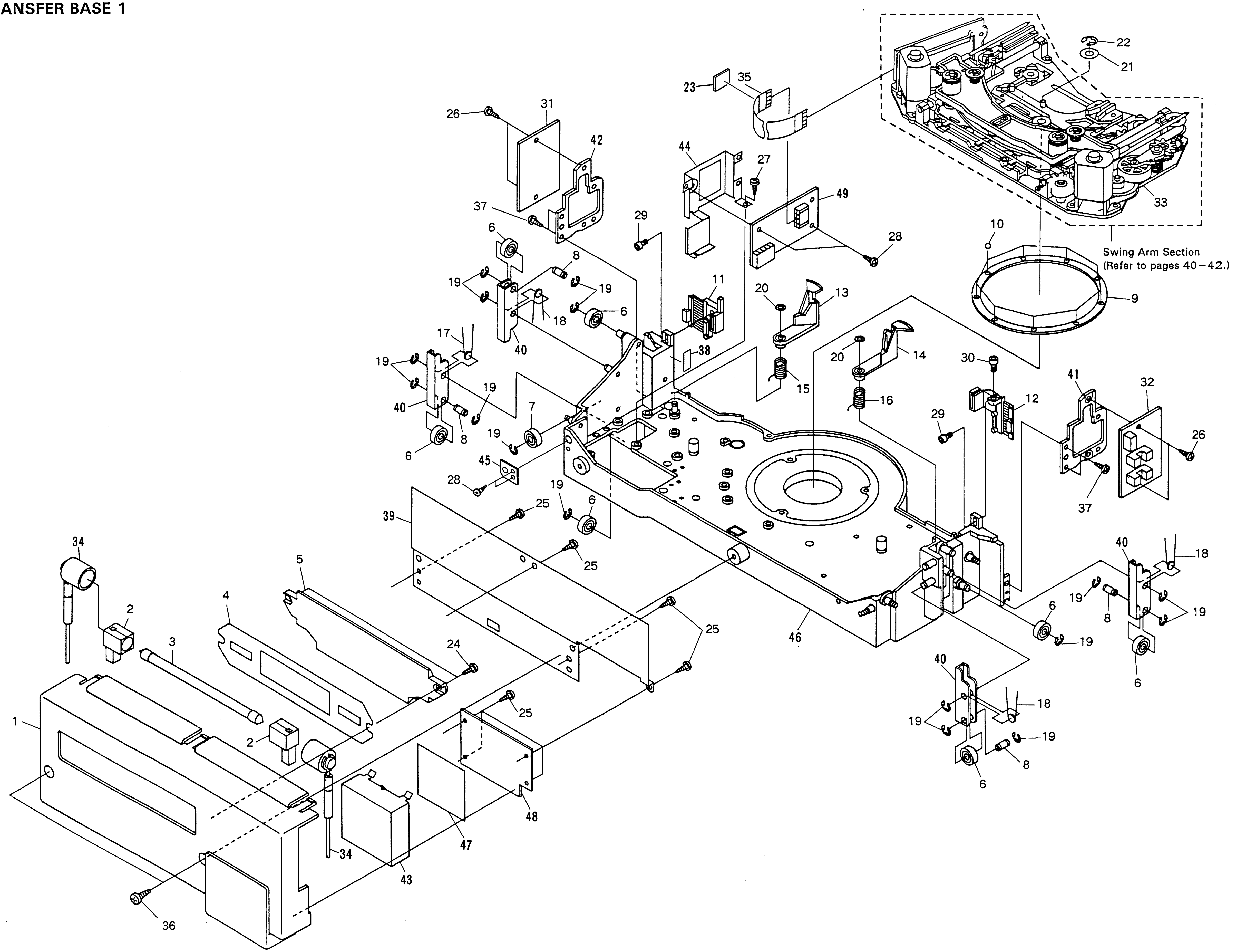
5.5 DOOR ASSEMBLY

Parts list of Door Assembly

Mark	No.	Description	Parts No.
	1	DOOR PACKING	DEB1145
	2	GLASS PACKING	DEB1204
	3	RIVET	DEC1318
	4	WINDOW STOPPER	DNH1451
	5	DOOR STAY	DNH1686
	6	DOOR SASH	DNH1697
	7	DOOR L	DNH1771
	8	INDICATOR	DNK1898
	9	DOOR ESCUTCHEON (UPPER)	DNK2419
	10	DOOR ESCUTCHEON (LOWER)	DNK2420
	11	DOOR DECORATION PANEL	DNK2423
	12	DOOR HANDLE	DXB1392
	13	DOOR GLASS	DAN1019
	14	DOOR (R) ASSEMBLY	DXB1436
	15	CAUTION LABEL A	DRW1357
	16	SCREW	BBZ30P060FMC
	17	SCREW	DBA1046
NSP	18	DOOR LOCK PLATE	DNH1690
	19	EARTH SPRING	DBK1079



5.6 TRANSFER BASE 1


Swing Arm Section
(Refer to pages 40–42.)

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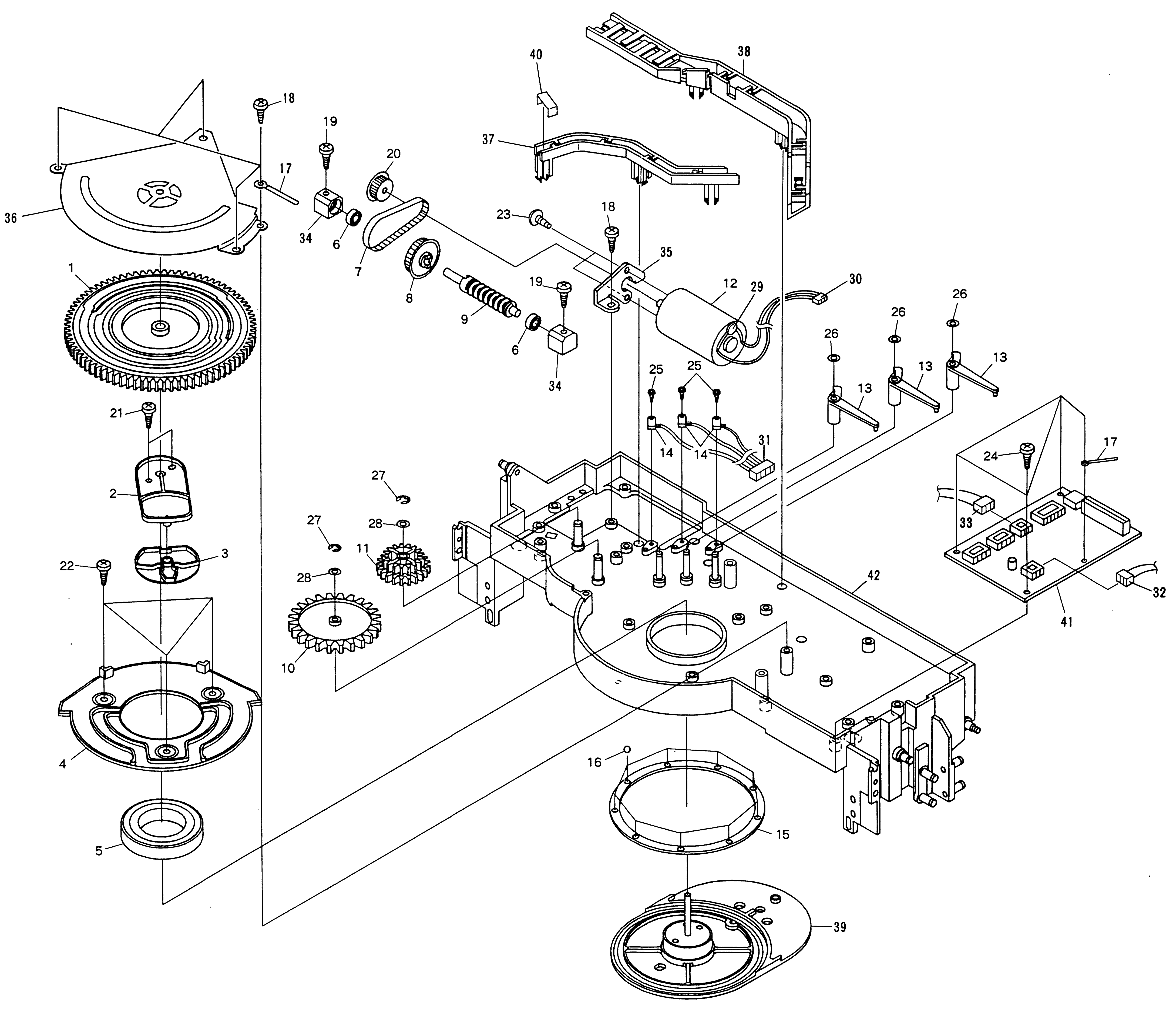
Parts list of Transfer Base 1

Mark	No.	Description	Parts No.
	1	IL PANEL	DNK2397
	2	FL SOCKET	DEB1201
	3	FLUORESCENT TUBE	DEL1009
	4	IL PLATE	DAH1640
	5	IL LENS	DNK1857
	6	BEARING	DXB1263
	7	BEARING	DXB1283
	8	H SHAFT 9	DLA1412
	9	RETAINER	DNK1849
	10	STEEL BOWL	VNX1006
	11	BELT STOPPER (L)	DNK1855
	12	BELT STOPPER (R)	DNK1854
	13	RELEASE LEVER (L)	DNK1881
	14	RELEASE LEVER (R)	DNK1880
	15	D RELEASE SPRING (L)	DBH1138
	16	D RELEASE SPRING	DBH1137
	17	H SPRING 2	DBH1144
	18	H1 SPRING	DBH1136
	19	E RING	YE25FUC
	20	WASHER	WT26D047D025
	21	SPRING	DBK1049
	22	E RING	YE40FUC
	23	FLEXIBLE CUSHION D	DEB1158
	24	SCREW	BPZ30P060FCU
	25	SCREW	BBZ30P080FMC
	26	SCREW	PMH30P050FMC
	27	SCREW	PMH30P060FMC
	28	SCREW	PMA30P060FMC
	29	SCREW	SMZ30H060FBT
	30	SCREW	SMZ30H120FBT
◉	31	VSLB UNIT	DWP1026
◉	32	VSRB UNIT	DWP1027
	33	SWING ASSEMBLY	DXX1887
	34	FL TERMINAL ASSEMBLY	DXB1386
	35	FLEXIBLE CORD (09P)	DDD1051
	36	SCREW	PMH30P080FMC
	37	SCREW	AMZ30P040FMC
	38	HARNESS SHEET	VEX1022
	39	IL SHASSIS	DNF1369
	40	H PLATE 1	DNH1412
	41	H PLATE 3	DNH1413
	42	H PLATE 4	DNH1414
	43	SHIELD CASE 2	DNH1419
	44	HAN PCB STAY	DNH1421
	45	SHIPPING BRACKET A	DNH1464
	46	TRANSFER BASE ASSEMBLY	DXB1387
	47	SHIELD PLATE	DEC1471
◉	48	DISP UNIT	DWX1292
◉	49	CNNB UNIT	DWX1180

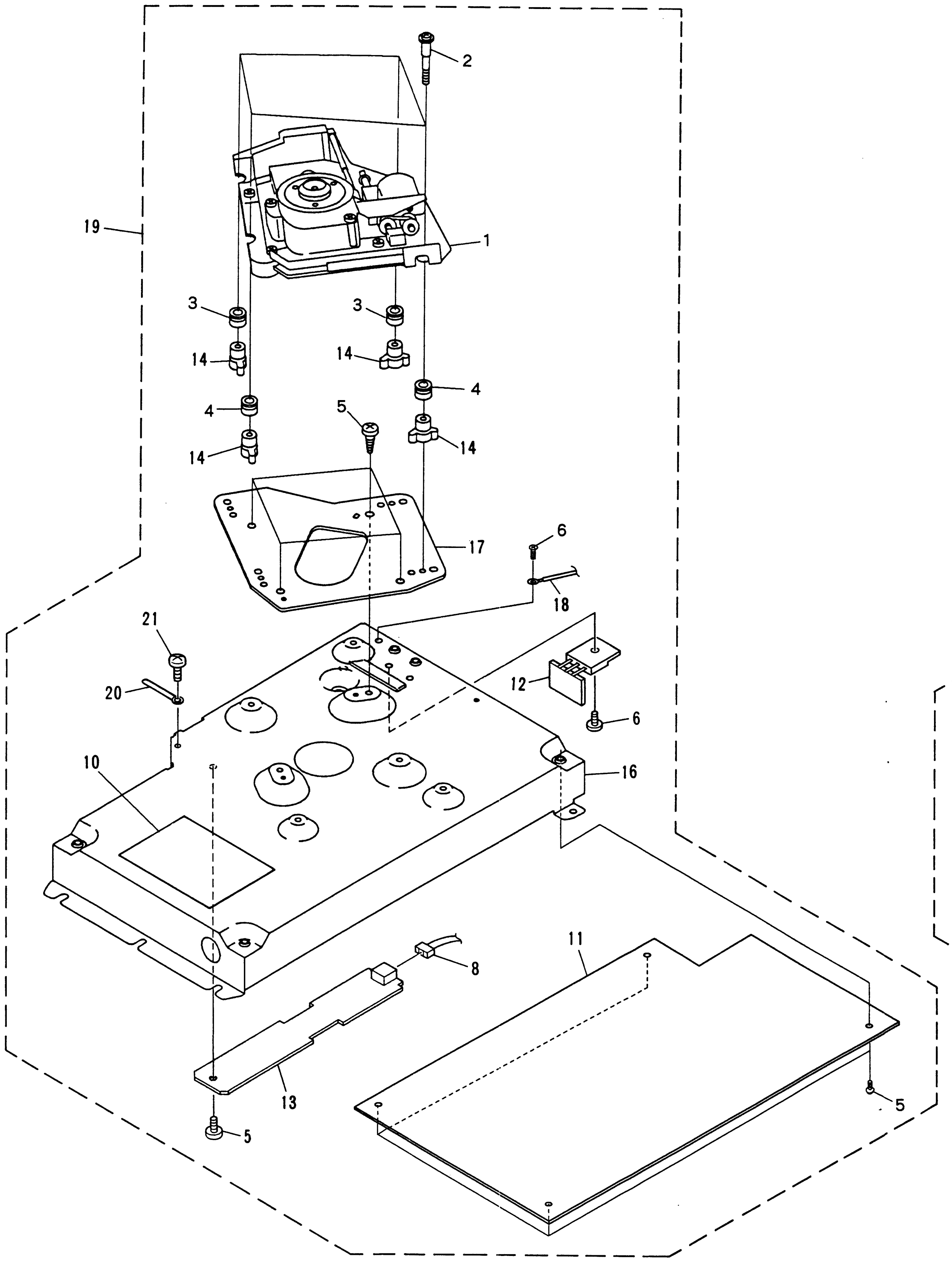
5.7 TRANSFER BASE 2

Parts list of Transfer Base 2

Mark	No.	Description	Parts No.
	1	SW CAM GEAR	DNK1844
	2	SW ARM	DNS1124
	3	SW FOLLOWER	DNK1846
	4	SW INDUCER	DNK1847
	5	BEARING	DXB1231
	6	BEARING	DXB1176
	7	S2M TIMING BELT	DMS1006
	8	S2M PULLEY (L)	DNK1390
	9	WORM GEARS (S)	DLA1270
	10	SW GEAR 2	DNK1843
	11	SW WORM WHEEL	DNK1842
	12	DC MOTOR	DXM1037
	13	SW LEVER	DNK1848
	14	PUSH SWITCH	DSG1012
	15	RETAINER	DNK1849
	16	STEEL BOWL	VNX1006
	17	CORD CLAMPER (STEEL)	RNH-184
	18	SCREW	PMA30P060FMC
	19	SCREW	AMZ30P120FMC
	20	S2M PULLEY (S)	DNK1389
	21	SCREW	BMZ30P060FMC
	22	SCREW	BMZ30P040FMC
	23	SCREW	PMA30P040FCU
	24	SCREW	PMB30P060FMC
	25	SCREW	PMH20P080FMC
	26	WASHER	WT26D047D025
	27	E RING	YE25FUC
	28	WASHER	WA41D065D025
	29	CERAMIC CAPACITOR	CKDYF473Z50
	30	CONNECTOR ASSEMBLY	DKP1885
	31	CONNECTOR ASSEMBLY	DKP1886
	32	CONNECTOR ASSEMBLY	DKP1896
	33	CONNECTOR ASSEMBLY	DKP1967
	34	WORM STAY	DLA1413
	35	MOTOR STAY 2	DNH1417
	36	SW GEAR STAY	DNH1768
	37	HARNESS GUIDE (A)	DNK1859
	38	HARNESS GUIDE (B)	DNK1860
	39	TURN TABLE ASSEMBLY	DXB1260
NSP	40	DUMP SHEET	VEX1021
◉	41	VCNB UNIT	DWP1025
	42	TRANSFER BASE ASSEMBLY	DXB1387



5.8 CD PLAYER SECTION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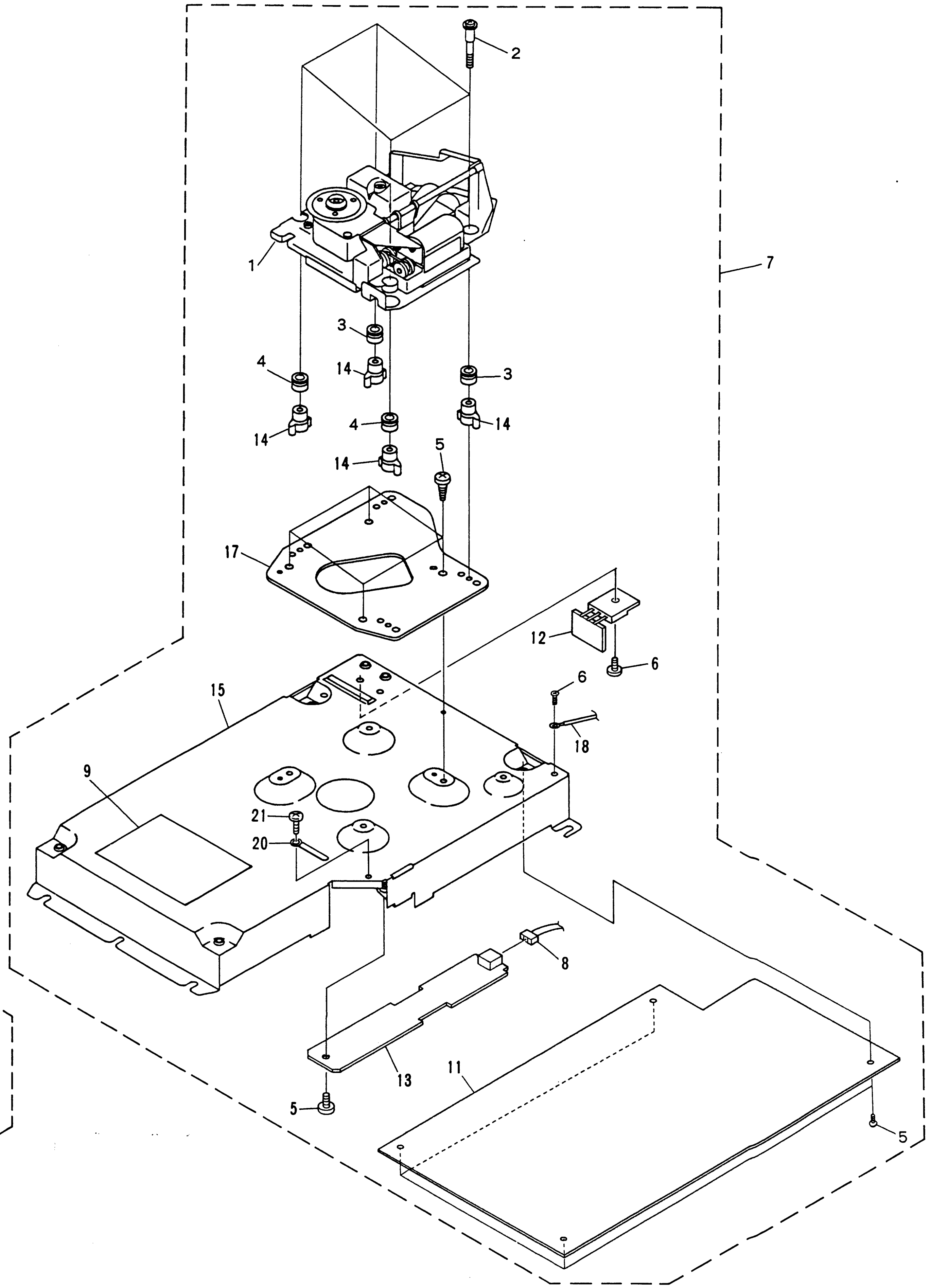
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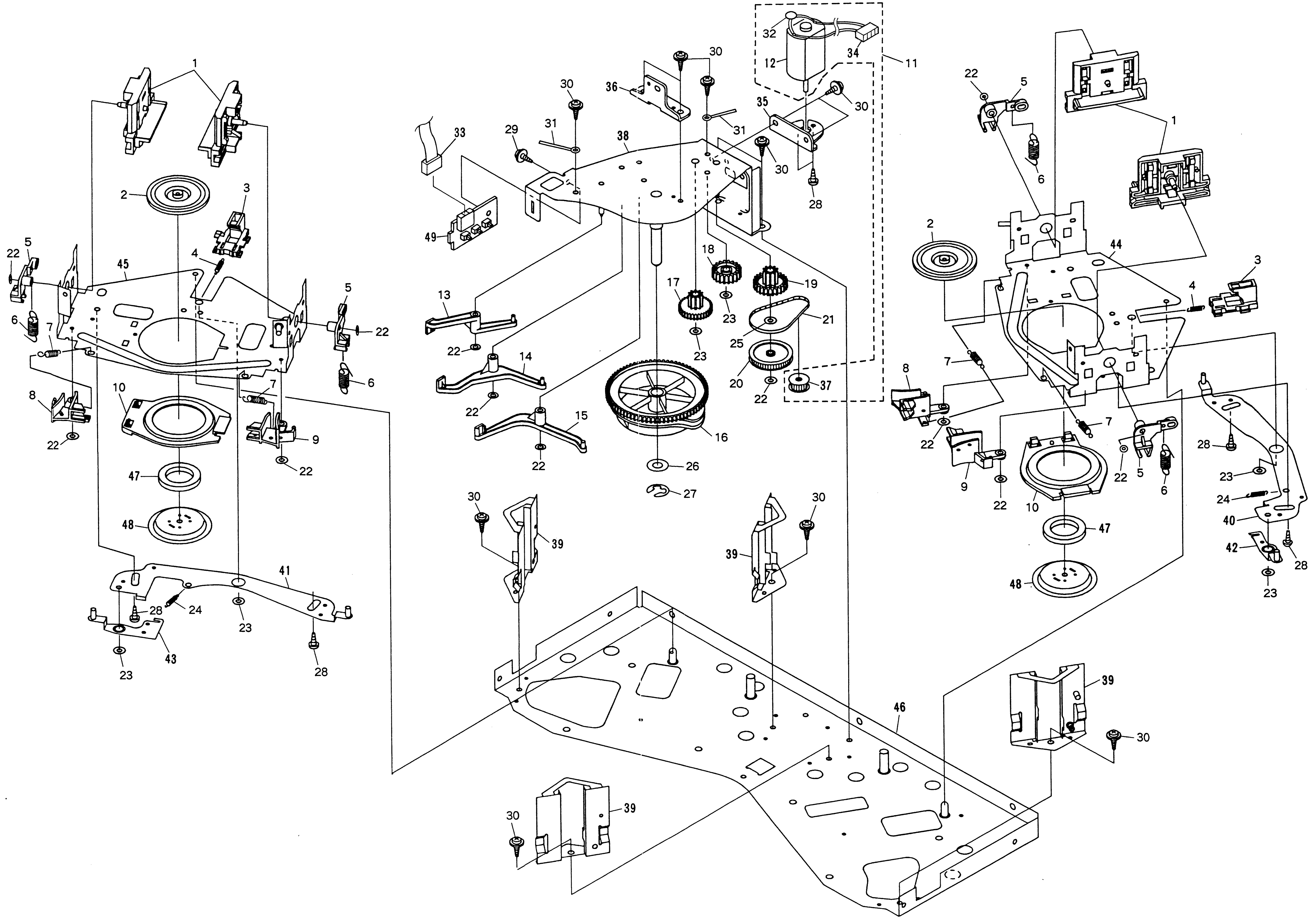
Parts list of CD Player Section

Mark	No.	Description	Parts No.
	1	SERVO MECHANISM ASSEMBLY	DXX1546
	2	SCREW	PBA1011
	3	FLOAT (RUBBER)	PEB1014
	4	FLOAT (RUBBER)	PEB1132
	5	SCREW	BBZ30P060FMC
	6	SCREW	BBZ30P080FZK
	7	PLAYER (L) ASSEMBLY	DXX1889
	8	CONNECTOR ASSEMBLY	DKP2496
	9	CAUTION LABEL (B)	DRW1358
	10	CAUTION LABEL (C)	DRW1420
◉	11	CONT UNIT	DWG1302
◉	12	CDPS UNIT	DWX1290
◉	13	BRAN UNIT	DWX1289
NSP	14	MECHANISM SUPPORT	PNW1467
NSP	15	CDP BASE (L)	DNH1389
NSP	16	CDP BASE (R)	DNH1390
	17	CDP STAY	DNH1391
	18	EARTH LUG ASSEMBLY	DDB1012
	19	PLAYER (R) ASSEMBLY	DXX1890
	20	CORD CLAMPER	RNH-184
	21	SCREW	BBZ30P060FZK

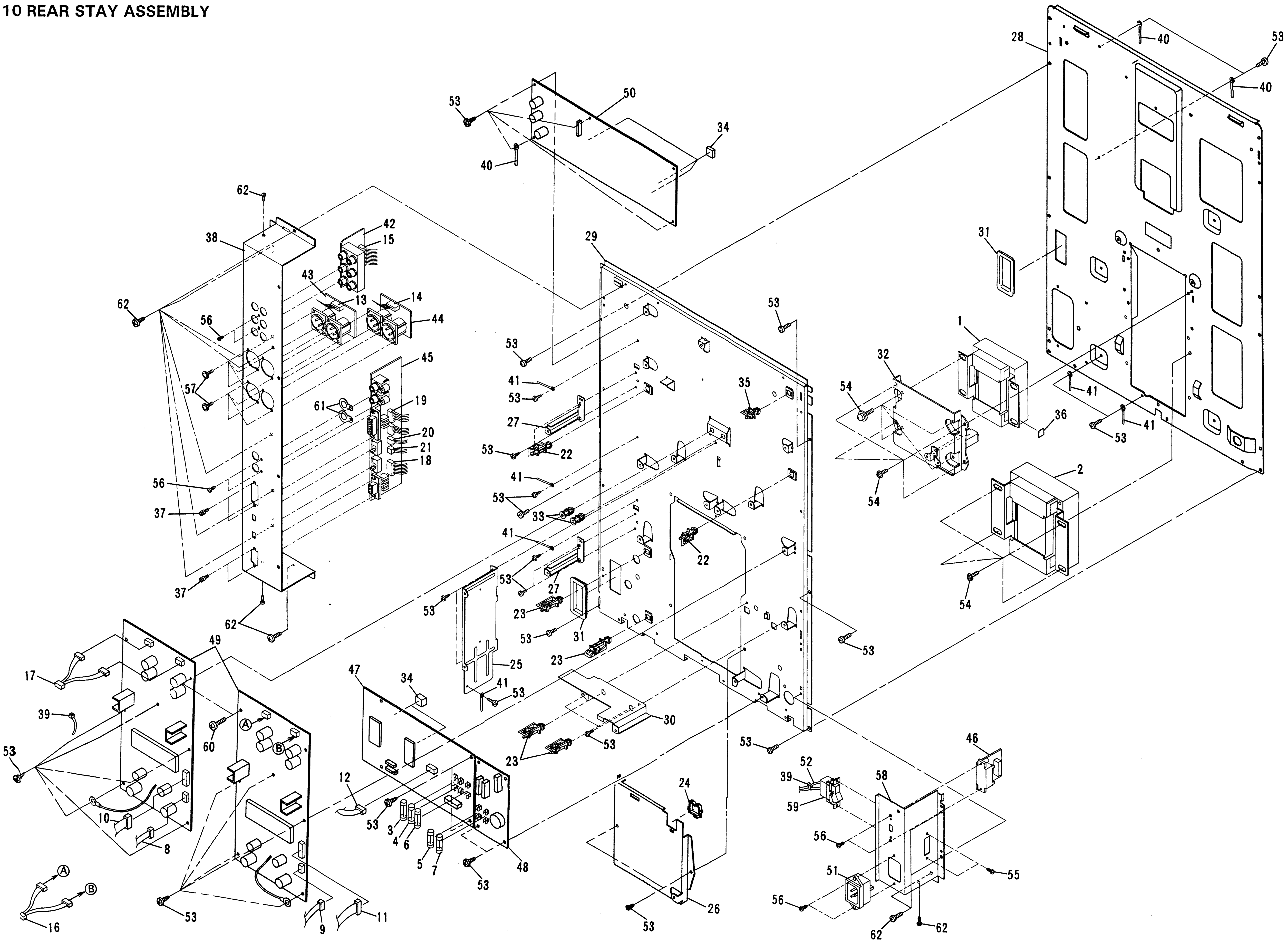
5.9 CLAMPER SECTION

Parts list of Clamper Section

Mark	No.	Description	Parts No.
	1	SIDE RACK	DNK1789
	2	CLAMPER (LOWER)	DNK1791
	3	SLIDE RACK	DNK1790
	4	REAR SP	DBH1147
	5	CLAMP LEVER	DNK1792
	6	CLAMP SP	DBH1128
	7	RACK SP	DBH1126
	8	DISC STOPPER (R)	DNK1794
	9	DISC STOPPER (L)	DNK1793
	10	CLAMPER RETAINER	DNK1801
	11	CLAMP MOTOR ASSEMBLY	DXX1888
NSP	12	MOTOR	PXM1002
	13	SWITCH LEVER (A)	DNK1798
	14	SWITCH LEVER (B)	DNK1799
	15	SWITCH LEVER (C)	DNK1800
	16	CLAMPER CAM GEAR	DNK1876
	17	CL GEAR (A)	DNK1795
	18	CL GEAR (C)	DNK1797
	19	CL GEAR (B)	DNK1796
	20	TIMING PULLEY	DNK1805
	21	TIMING BELT	DMS1015
	22	WASHER	WT26D047D025
	23	WASHER	WT34D060D025
	24	SYNCHRO SP	DBH1146
	25	E RING	YE25FUC
	26	POLYSLIDER WASHER	WA72D110D050
	27	NUTS	YE40FUC
	28	SCREW	PMB20P040FMC
	29	SCREW	PMB30P060FMC
	30	SCREW	AMZ30P040FMC
	31	CORD CLAMPER (STEEL)	RNH-184
	32	CERAMIC CAPACITOR	CKDYF103Z50
	33	CONNECTOR ASSEMBLY	DKP2404
	34	CONNECTOR ASSEMBLY	DKP2405
	35	MOTOR BRACKET	DNH1386
	36	GEAR STAY (UPPER)	DNH1387
	37	MOTOR PULLEY	DNK1580
	38	GEAR BASE ASSEMBLY	DXB1240
	39	SIDE BASE	DXB1269
	40	SYNCHRO LEVER (L)	DXB1270
	41	SYNCHRO LEVER (R)	DXB1271
	42	MOVING LEVER (L)	DXB1272
	43	MOVING LEVER (R)	DXB1273
	44	CLAMPER HOLDER (L) ASSEMBLY	DXB1380
	45	CLAMPER HOLDER (R) ASSEMBLY	DXB1381
	46	CLAMPER STAY ASSEMBLY	DXB1383
NSP	47	CLAMP MAGNET (FERRITE)	RMF1014
NSP	48	YOKE (FE)	PNB1216
◉	49	CLSB UNIT	DWS1126
	50	SCREW	PMA20P040FMC



5.10 REAR STAY ASSEMBLY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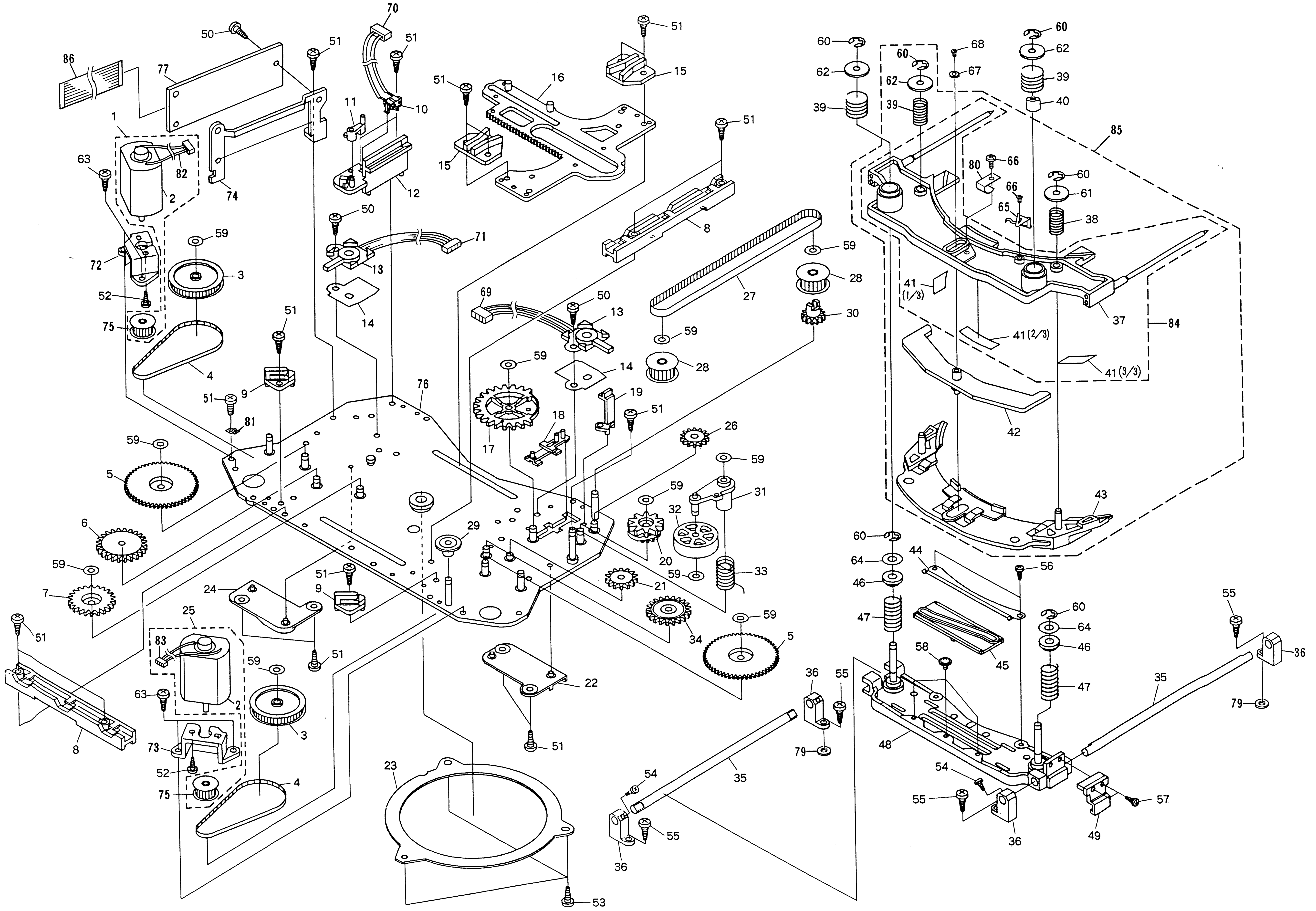
Parts list of Rear Stay Assembly

Mark	No.	Description	Parts No.
⚠	1	POWER TRANSFORMER (AH)	DTT1074
⚠	2	POWER TRANSFORMER (CH)	DTT1077
⚠	3	FUSE (T630mAL250V, FU8)	REK-098
⚠	4	FUSE (T1AL250V, FU7)	REK-100
⚠	5	FUSE (T2AL250V, FU10)	REK-103
⚠	6	FUSE (T2.5AL250V, FU6)	REK-104
⚠	7	FUSE (T800mAL250V, FU9)	REK-099
	8	CONNECTOR ASSEMBLY	DKP2386
	9	CONNECTOR ASSEMBLY	DKP2387
	10	CONNECTOR ASSEMBLY	DKP2388
	11	CONNECTOR ASSEMBLY	DKP2389
	12	CONNECTOR ASSEMBLY	DKP2390
	13	CONNECTOR ASSEMBLY	DKP2391
	14	CONNECTOR ASSEMBLY	DKP2392
	15	CONNECTOR ASSEMBLY	DKP2393
	16	CONNECTOR ASSEMBLY	DKP2394
	17	CONNECTOR ASSEMBLY	DKP2395
	18	CONNECTOR ASSEMBLY	DKP2400
	19	CONNECTOR ASSEMBLY	DKP2441
	20	CONNECTOR ASSEMBLY	DKP2442
	21	CONNECTOR ASSEMBLY	DKP2443
	22	CARD EDGE SPACER	DEC1394
	23	CARD EDGE SPACER	DEC1472
	24	WIRE CLIP	DEC1482
	25	SHIELD BOARD	DNH1679
	26	TRANS COVER	DNH1680
	27	REINFORCEMENT BRACKET	DNH1691
	28	REAR STAY	DNH1694
	29	PLATE (REAR)	DNH1696
	30	SHIELD BOARD (B)	DNH1699
NSP	31	PROTECTOR	DNK1340
	32	TRANS HOLDER ASSEMBLY	DXB1397
NSP	33	SPACER (PLACTIC)	PNY-404
	34	LED SPACER	VEB1173
NSP	35	CARD EDGE SPACER	VEC1535
NSP	36	DUMP SHEET	VEX1021
	37	BOLT (M2.6/M3)	DBA1037
	38	REAR PANEL	DNC1242
	39	CORD CLAMPER	VEC-067
NSP	40	CORD CLAMPER	VNF-005
	41	CORD CLAMPER	VNF-069
◉	42	AUOB UNIT	DWX1288
◉	43	XLR1 UNIT	DWX1283
◉	44	XLR2 UNIT	DWX1284
◉	45	CNCT UNIT	DWX1286
◉	46	VCHS UNIT	DWS1169
◉	47	DGIF UNIT	DWX1281
◉	48	SYPS UNIT	DWR1134
◉	49	DACB UNIT	DWM1281
◉	50	ANLG UNIT	DWX1281
⚠	51	INLET ASSEMBLY 3P	DKN1075
⚠	52	CONNECTOR ASSEMBLY	DKP2384
	53	SCREW	BBZ30P060FMC
	54	SCREW	ABZ40P080FMC
	55	SCREW	PMH30P080FMC
	56	SCREW	BBZ30P080FZK
	57	SCREW	PMH26P060FMC
	58	AC SUB PANEL	DNC1244
⚠	59	POWER SWITCH	DSA1012
	60	SCREW	BBZ30P120FMC
	61	GROUND PLATE	ANK1074
	62	SCREW	BBT30P060FNI

5.11 SWING ARM SECTION

Parts list of Swing Arm Section

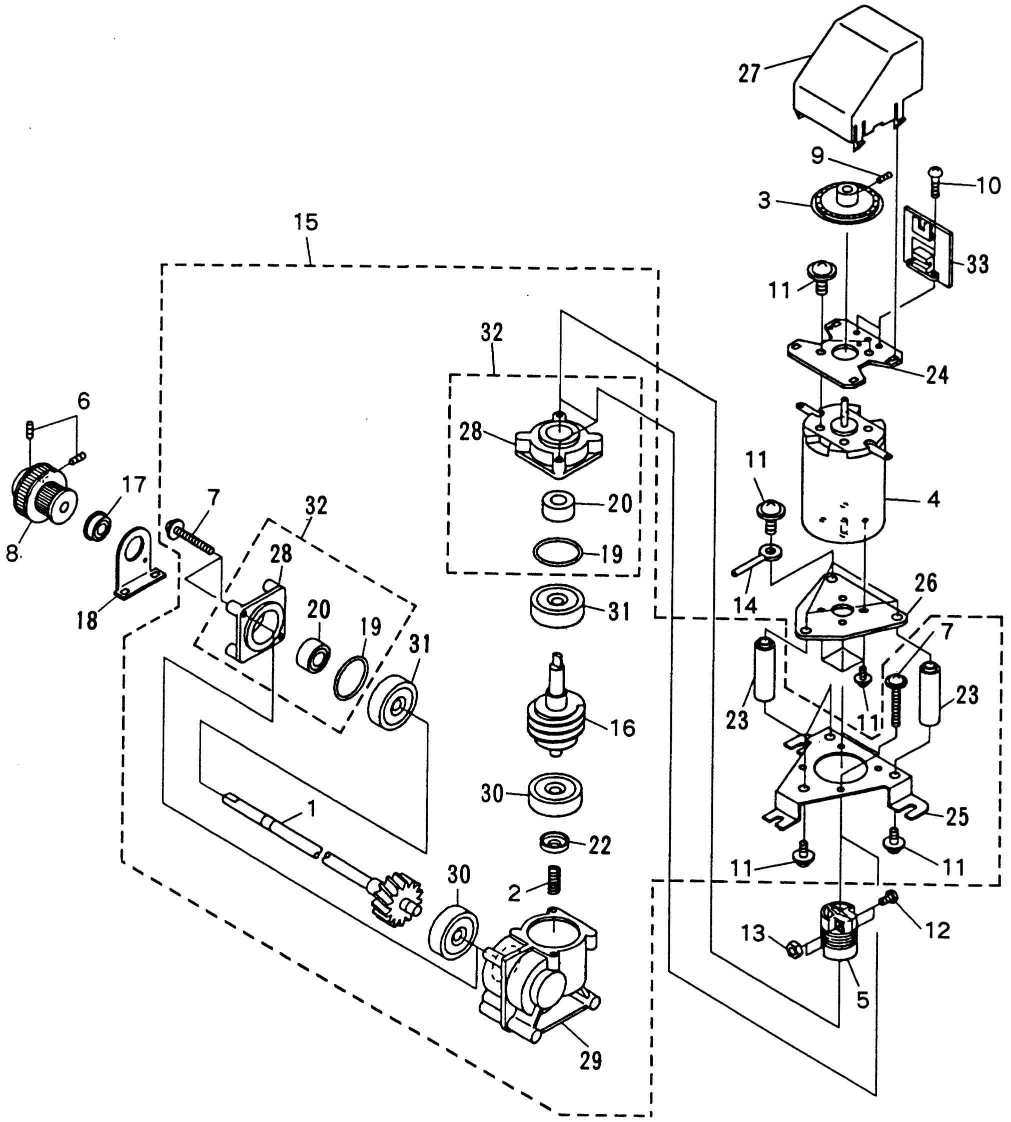
Mark	No.	Description	Parts No.
	1	CHUCK MOTOR ASSEMBLY	DXX1526
NSP	2	MOTOR	PXM1002
	3	TIMING PULLEY	DNK1805
	4	TIMING BELT	DMS1015
	5	CSL GEAR 2	DNK1820
	6	C GEAR 3	DNK1825
	7	C GEAR 4	DNS1098
	8	CORD HOLDER	DNK1837
	9	CORD CLIP	DNK1838
	10	PUSH SWITCH	DSG1014
	11	DISC SENSE LEVER	DNK1828
	12	DISC HOLDER (L)	DNK1830
	13	LEVER SWITCH	DSK1003
	14	SHIELD PLATE	DEC1313
	15	C CAM 2	DNK1831
	16	C CAM PLATE ASSEMBLY	DXB1250
	17	CAM GEAR	DNK1807
	18	SLSW LEVER	DNK1827
	19	DISC HOLDER (R)	DNK1829
	20	SLF GEAR	DNK1806
	21	SL GEAR 4	DNK1822
	22	SW CAM (R)	DNK1832
	23	THRUST STAY	DNH1401
	24	SW CAM (L)	DNK1833
	25	SLIDER MOTOR ASSEMBLY	DXX1527
	26	SL GEAR 5	DNK1823
	27	S2M TIMING BELT S	DMS1013
	28	S2M PULLEY SL	DNK1818
	29	SL ROLLER	DNK1835
	30	SL GEAR 6	DNK1824
	31	TENSION PLATE ASSEMBLY	DXB1247
	32	TENSIONER	DNK1817
	33	TENSION SPRING	DBH1129
	34	SL GEAR 3	DNK1821
	35	SHAFT (ϕ4)	DLA1372
	36	SHUFT HOLDER	DNS1092
	37	CHUCK 1 ASSEMBLY	DXB1430
	38	CHUCK SPRING 1	DBH1130
	39	CHUCK SPRING 2	DBK1131
	40	CHUCK SPACER	DNK1939
	41	RUBBER SHEET	DEB1138
	42	CHUCK 3	DNK1858
	43	CHUCK 2 ASSEMBLY	DXB1431
	44	CAM HOLDER	DNH1400
	45	CHUCK CAM	DNK1834
	46	CHUCK STAY	DLA1480
	47	CHUCK SPRING 3	DBH1132
	48	CHUCK BASE ASSEMBLY	DXB1301
	49	BELT STOPPER 2	DNK1826
	50	SCREW	PMA26P060FMC
	51	SCREW	PMA26P040FMC
	52	SCREW	PMA20P040FMC
	53	SCREW	BMZ26P030FMC
	54	SCREW	PMZ20P030FMC
	55	SCREW	PMZ26P040FMC
	56	SCREW	AMZ20P030FMC
	57	SCREW	PMA20P050FMC
	58	SCREW	DBA1029
	59	WASHER	WT26D047D025
	60	E RING	YE25FUC
	61	CHUCK WASHER	DNK1836
	62	CHUCK WASHER 2	DNK1839
	63	SCREW	PMH26P040FMC
	64	WASHER	WA32D060D025
	65	DISC RELEASE SPRING	DBK1055
	66	SCREW	PMB20P040FMC
	67	WASHER	WA20D060D040
	68	SCREW	BPZ20P040FMC
	69	CONNECTOR ASSEMBLY	DKP1887
	70	CONNECTOR ASSEMBLY	DKP1888
	71	CONNECTOR ASSEMBLY	DKP1891
	72	MOTOR STAY 1 (L)	DNH1398
	73	MOTOR STAY 1 (R)	DNH1399
	74	SW PCB STAY	DNH1776
	75	MOTOR PULLEY	DNK1580
	76	SW BASE ASSEMBLY	DXB1388
◉	77	SWGB UNIT	DWX1181
NSP	78	CLAMPER	PEC-107
	79	WASHER	WC30FMC
	80	CHUCK SPRING	DBK1050
	81	SW PCB STAY (B)	DNH1777
	82	CONNECTOR ASSEMBLY	DKP1890
	83	CONNECTOR ASSEMBLY	DKP1889
	84	CHUCK 1 RUBBER ASSEMBLY	DXX1638
	85	CHUCK ASSEMBLY	DXX1665
	86	FLEXIBLE CORD (09P)	DDD1051


41 (1/3)
41 (2/3)
41 (3/3)
A
B
C
D

5.12 GEARBOX ASSEMBLY

Parts list of Gerabox Assembly

Mark	No.	Description	Parts No.
	1	WORM WHEEL ASSEMBLY	DLA1523
	2	GB SPRING	DBH1148
	3	ENCORDER DISK ASSEMBLY	DXB1160
	4	VD MOTOR	DXM1025
	5	COUPLER	DNK1043
	6	SCREW	SMZ30H080FBT
	7	SCREW	AMZ30P160FMC
	8	VD PULLEY 1	DNK1810
	9	SCREW	ZMD26H030FBT
	10	SCREW	AMZ20P060FMC
	11	SCREW	AMZ30P060FMC
	12	SCREW	PMZ26P080FMC
	13	NUT	NB26FMC
	14	CORD CLAMPER (STEEL)	RNH-184
	15	GEAR BOX ASSEMBLY	DXX1891
	16	WORM GEAR ASSEMBLY	DLA1064
	17	BEARING	DXB1157
	18	VD PLATE 2	DNH1407
	19	O-RING	DEB1227
NSP	20	OIL SEAL	DEB1007
	21	CONNECTOR ASSEMBLY	DKP1882
	22	BEARING STOPPER	DLA1418
	23	VM BOSS 2	DLA1498
	24	VME PLATE	DNH1268
	25	GB PLATE	DNH1433
	26	M PLATE	DNH1434
	27	MOTOR COVER	DNK1864
	28	FLANGE	DNS1023
NSP	29	GEAR BOX	DNS1091
	30	BEARING	DXB1026
	31	BEARING	DXB1027
	32	FLANGE ASSEMBLY	DXX1892
◉	33	ENCB UNIT	DWX1178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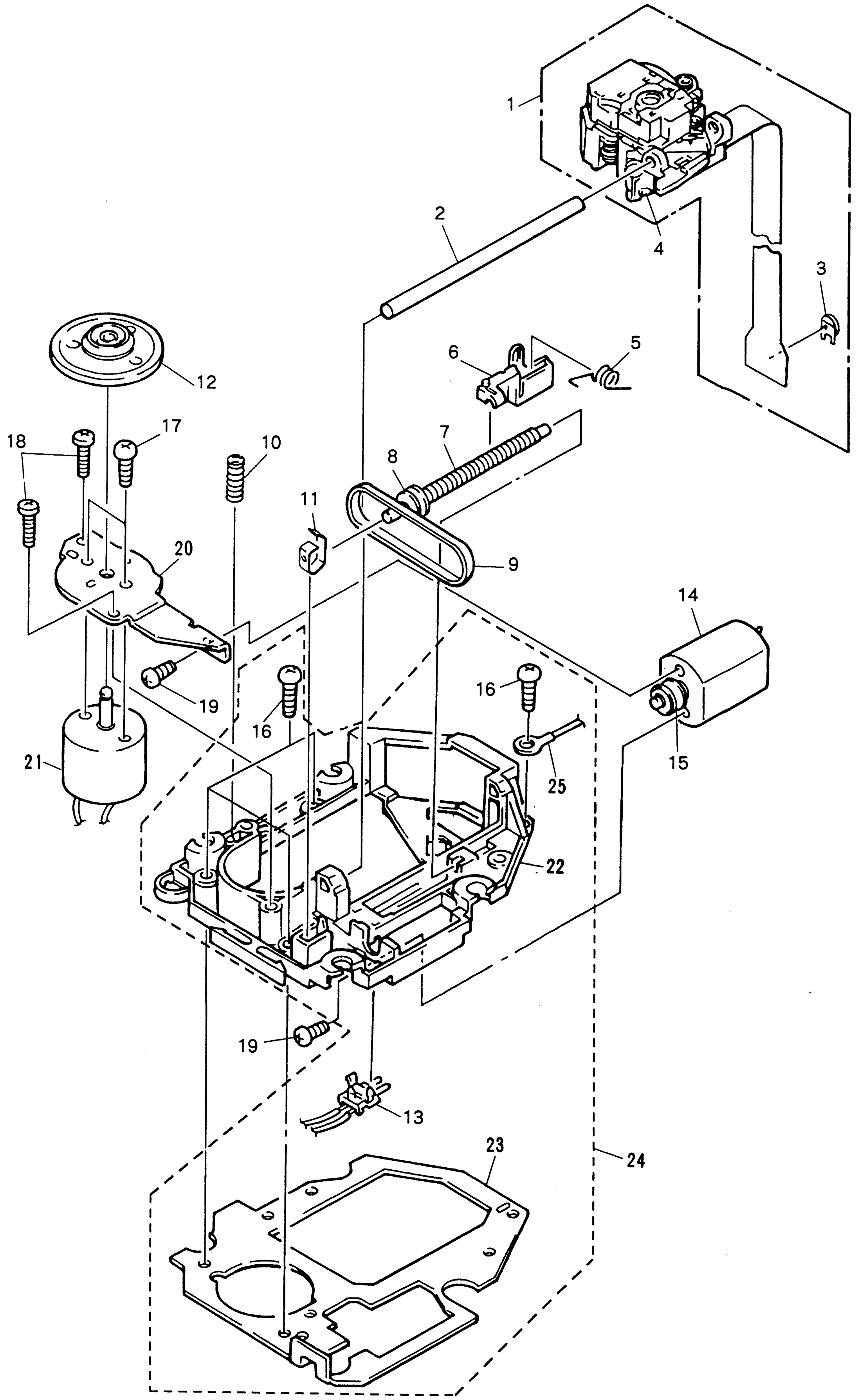
5.13 SERVO MECHANISM ASSEMBLY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25
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22
19
13
23
24

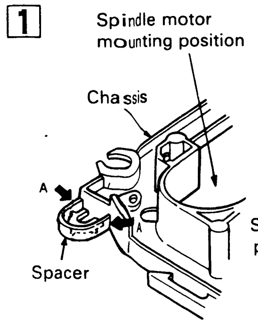
Parts list of Servo Mechanism Assembly

Mark	No.	Description	Parts No.
	1	PICK-UP ASSEMBLY	PEA1030
	2	GUIDE BAR (STEEL)	PLA1071
	3	SEMIFIXED VOLUME (VR1)	PCP1008
	4	CHIP CONDENSER (C1001)	CKSYF105Z16
	5	DRIVING SPRING (STEEL)	PBH1084
	6	HALF NUT (PLASTIC)	PNW1605
	7	DRIVING SCREW	PLA1003
	8	PULLEY	PNW1066
	9	BELT	PEB1072
	10	GROUND SPRING	PBH1009
	11	PLATE SPRING	PBK1057
	12	DISK TABLE (PC)	PNW1608
	13	PUSH SWITCH	DSG1014
	14	DC MOTOR (1.7W)	PXM1013
	15	MOTOR PULLEY (POM)	PNW1634
	16	SCREW	PBZ30P080FMC
	17	SCREW	JFZ20P030FNI
	18	SCREW	BPZ20P080FZK
	19	SCREW	PMZ20P030FMC
NSP	20	MOTOR BASE (FE)	PNB1211
NSP	21	SPINDLE MOTOR	DXM1042
NSP	22	MECHA CHASSIS (ABS)	PNW1604
NSP	23	MECHA BASE (FE)	PNB1212
NSP	24	MECHA BASE ASSEMBLY	PXA1305
	25	GROUND LEAD UNIT (300V)	PDF1087

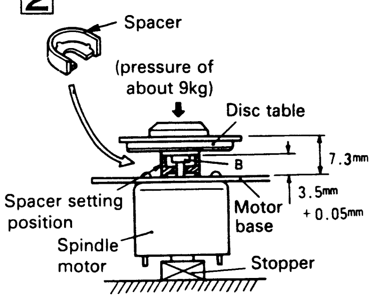
- **How to install the disc table**

1. Use nippers or other tool to cut the two sections marked Ⓐ in figure 1. Then remove the spacer.
2. While supporting the spindle motor shaft with the stopper, put spacer on top of the motor base (angled so it doesn't touch section Ⓑ), and stick the disc table on top (takes about 9kg pressure).

1


Spindle motor mounting position
Chassis
A
A
Spacer

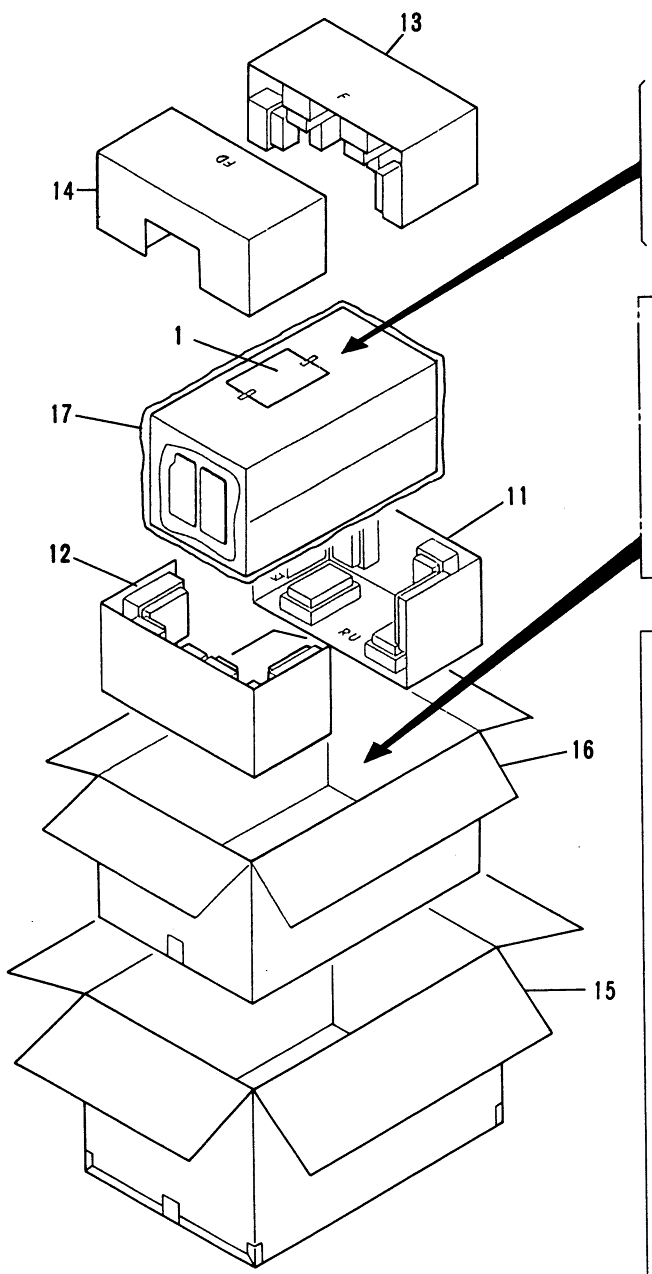
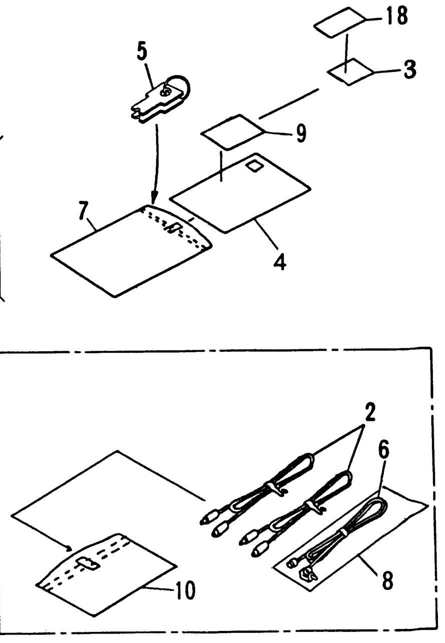
2


Spacer
(pressure of about 9kg)
Disc table
B
7.3mm
3.5mm
+0.05mm
Spacer setting position
Motor base
Spindle motor
Stopper

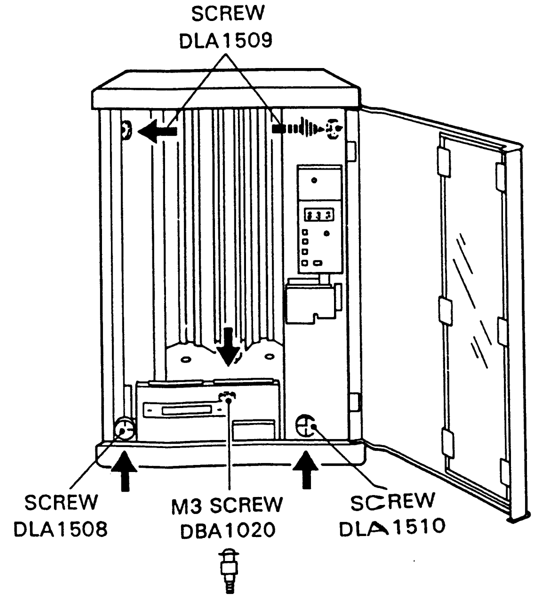
5.14 PACKING

Parts list of Packing

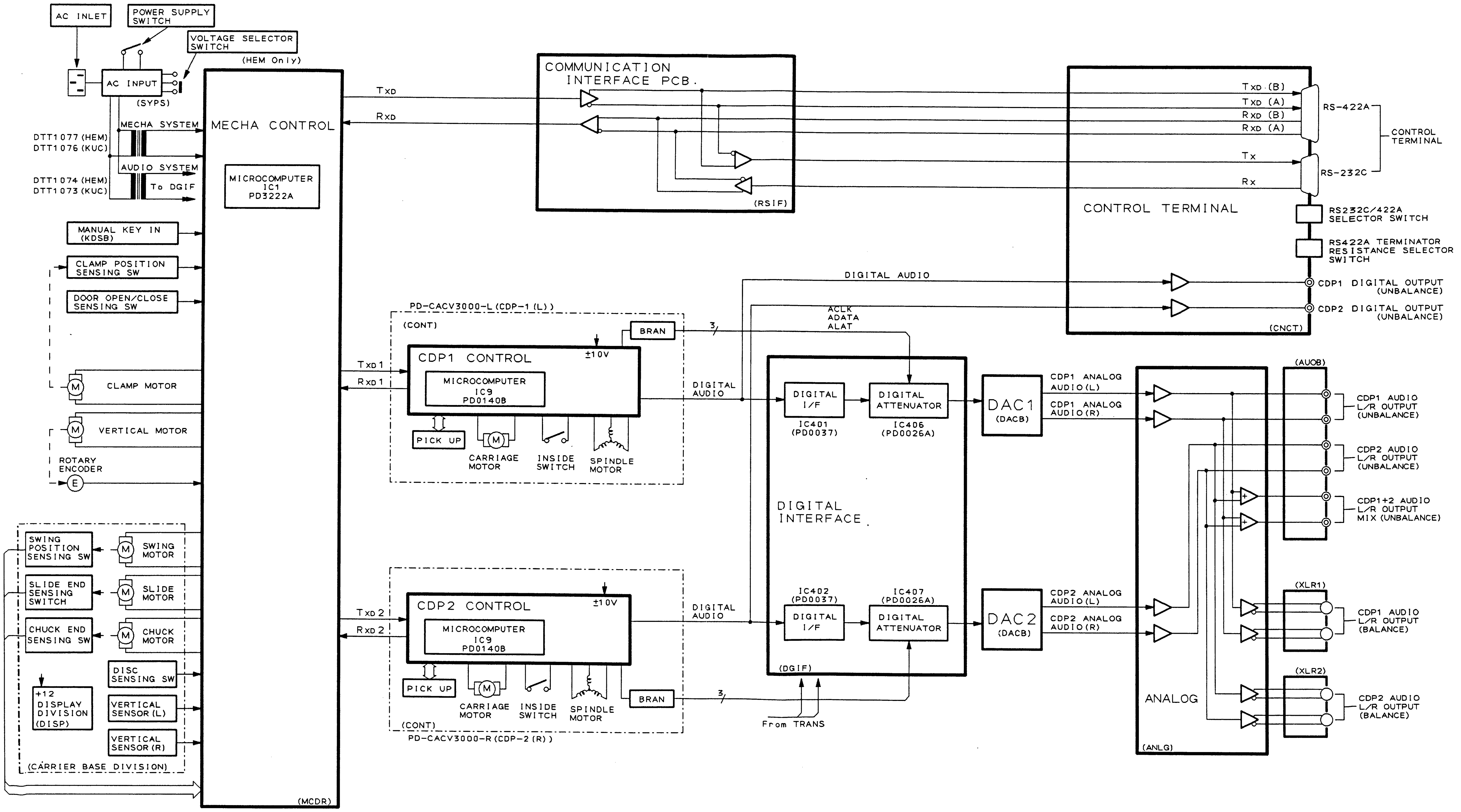
Mark	No.	Description	Parts No.
	1	CAUTION	DRM1074
	2	CORD WITH PLUG	DDE1016
	3	STATIC DISCHARGER	DED1073
	4	OPERATING INSTRUCTIONS	DRB1088
	5	LOCK	DXC1003
⚠	6	AC CORD	ODG1003
NSP	7	VINYL BAG	VHL-014
NSP	8	VINYL BAG 100×230×0.018	Z21-010
NSP	9	VINYL BAG 165×200×0.03	Z21-014
NSP	10	VINYL BAG 240×190×0.05	Z21-020
	11	PAD RU	DHA1187
	12	PAD RD	DHA1188
	13	PAD F	DHA1189
	14	PAD FD	DHA1215
	15	PACKING CASE	DHG1386
	16	INNER CASE	DHG1389
	17	PACKING SHEET	DHL1054
	18	STATIC ERASE INSTRUCTIONS	DRW1439



13
14
FD
F
1
17
11
12
RD
RU
16
15
5
18
3
9
7
4
2
6
10
8

- **How to prepare the unit for shipping**

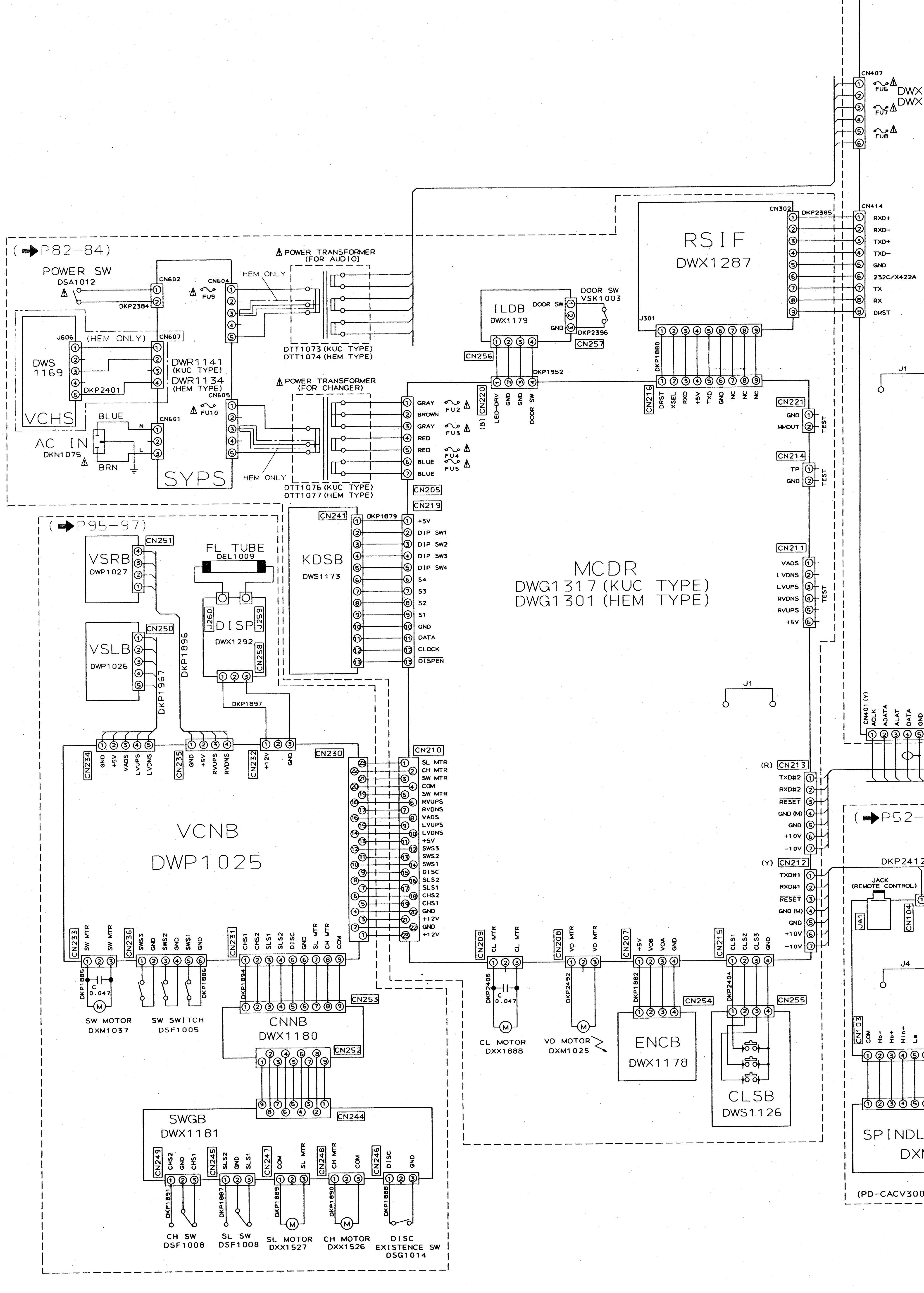

SCREW
DLA1509
SCREW
DLA1508
M3 SCREW
DBA1020
SCREW
DLA1510

6. BLOCK DIAGRAM


AC INLET
POWER SUPPLY SWITCH
VOLTAGE SELECTOR SWITCH
(HEM Only)
AC INPUT
(SYPS)
MECHA SYSTEM
AUDIO SYSTEM
To DGIF
DTT1077 (HEM)
DTT1076 (KUC)
DTT1074 (HEM)
DTT1073 (KUC)
MECHA CONTROL
MICROCOMPUTER
IC1
PD3222A
(MCDR)
MANUAL KEY IN (KDSB)
CLAMP POSITION SENSING SW
DOOR OPEN/CLOSE SENSING SW
CLAMP MOTOR
VERTICAL MOTOR
ROTARY ENCODER
E
M
SWING POSITION SENSING SW
SWING MOTOR
SLIDE END SENSING SWITCH
SLIDE MOTOR
CHUCK END SENSING SW
CHUCK MOTOR
DISC SENSING SW
+12
DISPLAY DIVISION (DISP)
VERTICAL SENSOR (L)
VERTICAL SENSOR (R)
(CARRIER BASE DIVISION)
TXD
RXD
COMMUNICATION INTERFACE PCB.
(RSIF)
TXD (B)
TXD (A)
RXD (B)
RXD (A)
Tx
Rx
RS-422A
RS-232C
CONTROL TERMINAL
CONTROL TERMINAL
RS232C/422A SELECTOR SWITCH
RS422A TERMINATOR RESISTANCE SELECTOR SWITCH
DIGITAL AUDIO
CDP1 DIGITAL OUTPUT (UNBALANCE)
CDP2 DIGITAL OUTPUT (UNBALANCE)
(CNCT)
PD-CACV3000-L (CDP-1 (L))
(CONT)
BRAN
3
ACLK
ADATA
ALAT
CDP1 CONTROL
±10V
MICROCOMPUTER
IC9
PD0140B
TXD1
RXD1
PICK UP
CARRIAGE MOTOR
INSIDE SWITCH
SPINDLE MOTOR
DIGITAL AUDIO
DIGITAL I/F
IC401
(PD0037)
DIGITAL ATTENUATOR
IC406
(PD0026A)
DIGITAL INTERFACE
IC402
(PD0037)
IC407
(PD0026A)
DIGITAL I/F
DIGITAL ATTENUATOR
(DGIF)
From TRANS
DAC1
(DACB)
DAC2
(DACB)
CDP1 ANALOG AUDIO (L)
CDP1 ANALOG AUDIO (R)
CDP2 ANALOG AUDIO (L)
CDP2 ANALOG AUDIO (R)
ANALOG
(ANLG)
(AUOB)
CDP1 AUDIO L/R OUTPUT (UNBALANCE)
CDP2 AUDIO L/R OUTPUT (UNBALANCE)
CDP1+2 AUDIO L/R OUTPUT MIX (UNBALANCE)
(XLR1)
CDP1 AUDIO L/R OUTPUT (BALANCE)
(XLR2)
CDP2 AUDIO L/R OUTPUT (BALANCE)
CDP2 CONTROL
±10V
MICROCOMPUTER
IC9
PD0140B
TXD2
RXD2
PICK UP
CARRIAGE MOTOR
INSIDE SWITCH
SPINDLE MOTOR
BRAN
3
(CONT)
PD-CACV3000-R (CDP-2 (R))
DIGITAL AUDIO

7. SCHEMATIC AND PCB CONNECTIONS DIAGRAMS

7.1 OVERALL SCHEMATIC DIAGRAM



P65-6
P82-84
POWER SW
DSA1012
DKP2384
CN602
CN604
FU9
HEM ONLY
POWER TRANSFORMER (FOR AUDIO)
DTT1073 (KUC TYPE)
DTT1074 (HEM TYPE)
J606
(HEM ONLY)
CN607
DWS 1169
DKP2401
DWR1141 (KUC TYPE)
DWR1134 (HEM TYPE)
CN605
VCHS
BLUE
CN601
FU10
AC IN
DKN1075
BRN
SYPS
POWER TRANSFORMER (FOR CHANGER)
DTT1076 (KUC TYPE)
DTT1077 (HEM TYPE)
GRAY
BROWN
RED
FU2
FU3
FU4
FU5
CN205
CN219
ILDB
DWX1179
DOOR SW
VSK1003
GND
DKP2396
CN257
CN256
DKP1952
CN220
LED-DRV
RSIF
DWX1287
CN302
DKP2385
J301
DKP1880
CN216
DRST
XSEL
RXD
+5V
TXD
NC
CN407
FU6
FU7
FU8
DWX
CN414
RXD+
RXD−
TXD+
TXD−
232C/X422A
TX
RX
CN221
MMOUT
TEST
CN214
TP
CN211
VADS
LVDNS
LVUPS
RVDNS
RVUPS
MCDR
DWG1317 (KUC TYPE)
DWG1301 (HEM TYPE)
J1
CN401 (Y)
ACLK
ADATA
ALAT
DATA
P95-97
VSRB
DWP1027
CN251
FL TUBE
DEL1009
DISP
DWX1292
J260
J259
CN258
KDSB
DWS1173
CN241
DKP1879
DIP SW1
DIP SW2
DIP SW3
DIP SW4
S4
S3
S2
S1
CLOCK
DISPEN
VSLB
DWP1026
CN250
DKP1896
DKP1967
DKP1897
CN234
CN235
CN232
+12V
CN230
CN210
SL MTR
CH MTR
SW MTR
COM
SWS3
SWS2
SWS1
DISC
SLS2
SLS1
CHS2
CHS1
VCNB
DWP1025
(R) CN213
TXD#2
RXD#2
RESET
GND (M)
+10V
−10V
(Y) CN212
TXD#1
RXD#1
P52-
DKP2412
JACK (REMOTE CONTROL)
JA1
CN104
J4
CN103
Hb−
Hb+
Hin+
La
CN233
CN236
CN231
DKP1885
DKP1886
DKP1894
C 0.047
SW MOTOR
DXM1037
SW SWITCH
DSF1005
CN253
CNNB
DWX1180
CN252
CN244
SWGB
DWX1181
CN249
CN245
CN247
CN248
CN246
DKP1891
DKP1887
DKP1889
DKP1890
DKP1888
CH SW
DSF1008
SL SW
SL MOTOR
DXX1527
CH MOTOR
DXX1526
DISC EXISTENCE SW
DSG1014
CN209
CL MTR
CN208
VD MTR
CN207
VOB
VOA
CN215
CLS1
CLS2
CLS3
DKP2405
DKP2492
DKP1882
DKP2404
CN254
CN255
CL MOTOR
DXX1888
VD MOTOR
DXM1025
ENCB
DWX1178
CLSB
DWS1126
SPINDL
DXI
(PD-CACV300
A
B
C
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F
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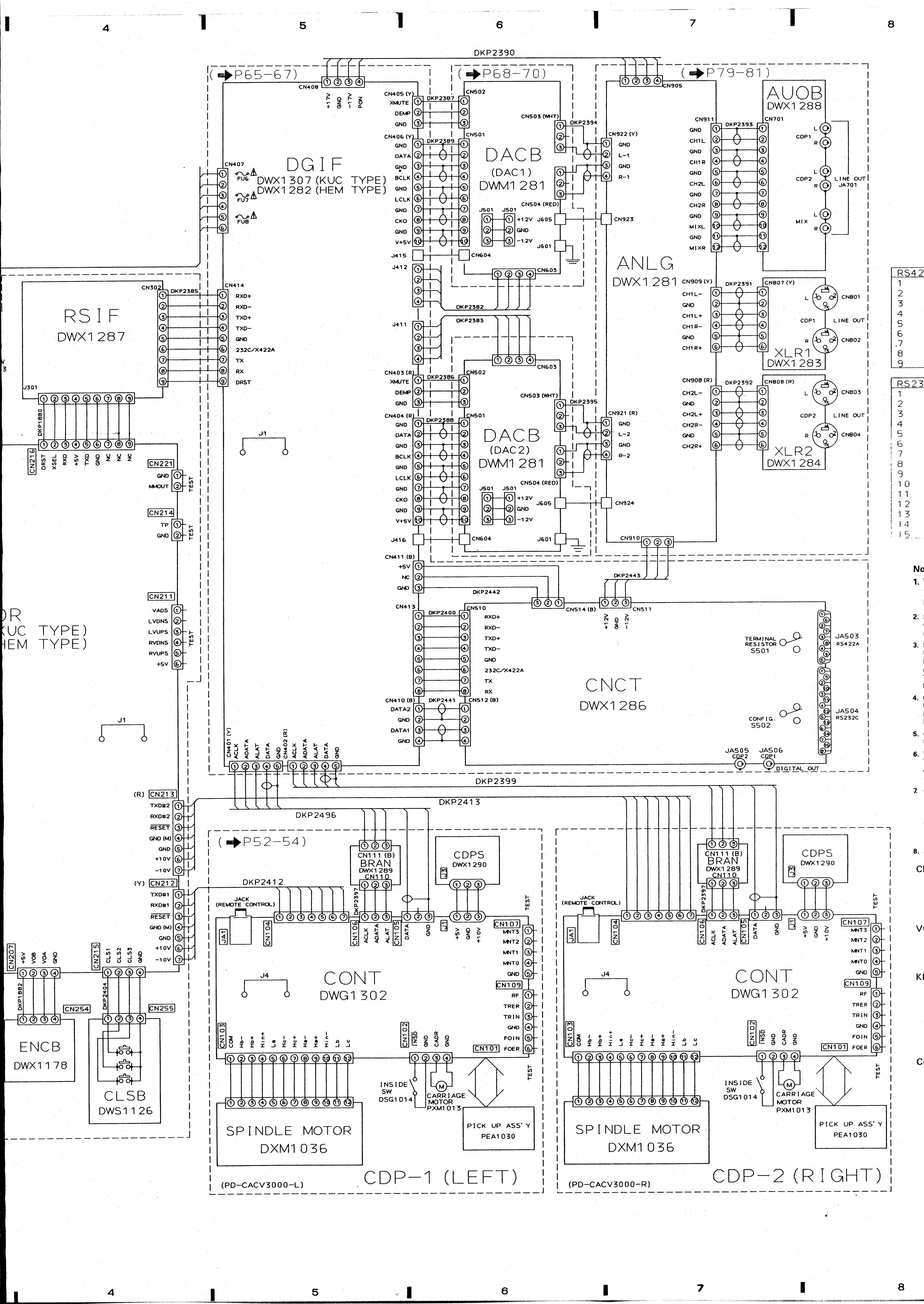
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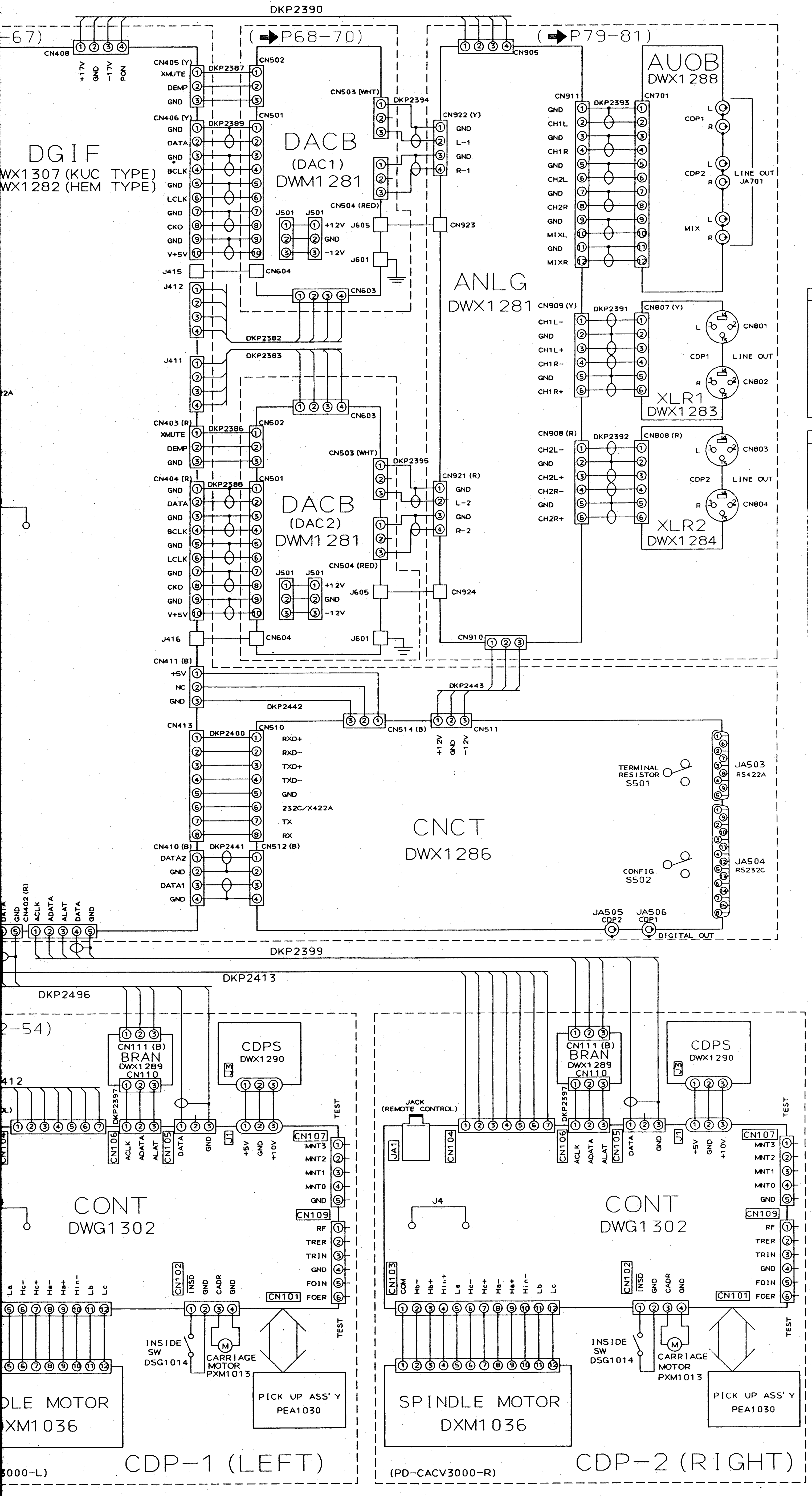
(➡P68-70)
(➡P79-81)
CN408
+17V
GND
-17V
PON
CN405 (Y)
XMUTE
DEMP
GND
DKP2387
CN502
CN406 (Y)
DKP2389
CN501
GND
DATA
BCLK
LCLK
CKO
V+5V
CN407
FU6
FU7
FU8
DGIF
DWX1307 (KUC TYPE)
DWX1282 (HEM TYPE)
DACB
(DAC1)
DWM1281
CN503 (WHT)
DKP2394
CN922 (Y)
L-1
R-1
CN504 (RED)
J501
+12V
-12V
J605
J601
CN923
J415
J412
CN604
CN603
ANLG
DWX1281
CN905
CN911
DKP2393
CN701
AUOB
DWX1288
CH1L
CH1R
CH2L
CH2R
MIXL
MIXR
CDP1
CDP2
MIX
LINE OUT
JA701
CN909 (Y)
DKP2391
CN807 (Y)
CH1L-
CH1L+
CH1R-
CH1R+
CN801
CN802
XLR1
DWX1283
CN908 (R)
DKP2392
CN808 (R)
CH2L-
CH2L+
CH2R-
CH2R+
CN803
CN804
XLR2
DWX1284
RS42
RS23
No
RSIF
DWX1287
CN302
DKP2385
CN414
RXD+
RXD-
TXD+
TXD-
232C/X422A
TX
RX
DRST
J301
DKP1880
CN216
DRST
XSEL
RXD
+5V
TXD
NC
DKP2382
J411
DKP2383
CN403 (R)
DKP2386
CN404 (R)
DKP2388
DACB
(DAC2)
DWM1281
CN503 (WHT)
DKP2395
CN921 (R)
L-2
R-2
CN924
J416
CN910
J1
CN221
MMOUT
TEST
CN214
TP
CN411 (B)
NC
DKP2442
DKP2443
CN514 (B)
CN511
CN413
DKP2400
CN510
CN211
VADS
LVDNS
LVUPS
RVDNS
RVUPS
OR
KUC TYPE)
HEM TYPE)
TERMINAL RESISTOR
S501
JA503
RS422A
CNCT
DWX1286
CONFIG.
S502
JA504
RS232C
CN410 (B)
DKP2441
CN512 (B)
DATA2
DATA1
CN401 (Y)
ACLK
ADATA
ALAT
CN402 (R)
JA505
CDP2
JA506
CDP1
DIGITAL OUT
DKP2399
(R) CN213
TXD#2
RXD#2
RESET
GND (M)
+10V
-10V
DKP2413
DKP2496
(Y) CN212
TXD#1
RXD#1
CN207
VOB
VOA
CN215
CLS1
CLS2
CLS3
DKP1882
DKP2404
CN254
CN255
ENCB
DWX1178
CLSB
DWS1126
(➡P52-54)
CN111 (B)
BRAN
DWX1289
CN110
CDPS
DWX1290
DKP2412
JACK
(REMOTE CONTROL)
JA1
CN104
CN106
DKP2397
CN105
J3
J1
CN107
MNT3
MNT2
MNT1
MNT0
CN109
RF
TRER
TRIN
FOIN
FOER
CONT
DWG1302
J4
CN103
COM
Hb-
Hb+
Hin+
La
Hc-
Hc+
Ha-
Ha+
Hin-
Lb
Lc
CN102
INSD
CADR
CN101
INSIDE SW
DSG1014
CARRIAGE MOTOR
PXM1013
M
SPINDLE MOTOR
DXM1036
PICK UP ASS'Y
PEA1030
CDP-1 (LEFT)
(PD-CACV3000-L)
CDP-2 (RIGHT)
(PD-CACV3000-R)
CI
VC
KE
CI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(➡P68-70)
(➡P79-81)
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+17V
GND
-17V
PON
DGIF
WX1307 (KUC TYPE)
WX1282 (HEM TYPE)
CN405 (Y)
XMUTE
DEMP
GND
CN406 (Y)
DATA
BCLK
LCLK
CKO
V+5V
J415
J412
J411
DKP2387
DKP2389
DKP2382
DKP2383
CN502
CN501
DACB
(DAC1)
DWM1281
CN503 (WHT)
CN504 (RED)
J501
+12V
-12V
J605
J601
CN604
CN603
DKP2394
CN922 (Y)
L-1
R-1
CN923
CN905
ANLG
DWX1281
AUOB
DWX1288
CN701
CN911
DKP2393
CH1L
CH1R
CH2L
CH2R
MIXL
MIXR
CDP1
CDP2
MIX
LINE OUT
JA701
CN909 (Y)
DKP2391
CN807 (Y)
CH1L-
CH1L+
CH1R-
CH1R+
CN801
CN802
XLR1
DWX1283
CN403 (R)
CN404 (R)
DKP2386
DKP2388
DACB
(DAC2)
DWM1281
DKP2395
CN921 (R)
L-2
R-2
CN924
CN908 (R)
DKP2392
CN808 (R)
CH2L-
CH2L+
CH2R-
CH2R+
CN803
CN804
XLR2
DWX1284
J416
CN910
CN411 (B)
+5V
NC
DKP2443
DKP2442
CN514 (B)
CN511
+12V
GND
-12V
CN413
DKP2400
CN510
RXD+
RXD-
TXD+
TXD-
232C/X422A
TX
RX
CN410 (B)
DKP2441
CN512 (B)
DATA2
DATA1
CNCT
DWX1286
TERMINAL RESISTOR
S501
CONFIG.
S502
JA503
RS422A
JA504
RS232C
JA505
CDP2
JA506
CDP1
DIGITAL OUT
CN402 (R)
ACLK
ADATA
ALAT
DATA
22A
DKP2399
DKP2413
DKP2496
2-54)
412
CN111 (B)
BRAN
DWX1289
CN110
CDPS
DWX1290
J3
DKP2397
CN106
CN105
CN104
J1
TEST
+5V
+10V
CN107
MNT3
MNT2
MNT1
MNT0
CN109
RF
TRER
TRIN
FOIN
FOER
CN101
CONT
DWG1302
CN102
INSD
CADR
CN103
COM
Hb-
Hb+
Hin+
Ha-
Hc-
Hc+
Ha+
Hin-
La
Lb
Lc
INSIDE SW
DSG1014
CARRIAGE MOTOR
PXM1013
PICK UP ASS'Y
PEA1030
SPINDLE MOTOR
DXM1036
JACK
(REMOTE CONTROL)
JA1
J4
000-L)
CDP-1 (LEFT)
(PD-CACV3000-R)
CDP-2 (RIGHT)

RS422A (9P)	
1	GND
2	TXD (A)
3	RXD (A)
4	GND
5	NC
6	GND
7	TXD (B)
8	RXD (B)
9	GND

RS232C (15P)	
1	GND
2	TX
3	RX
4	DTR
5	NC
6	NC
7	NC
8	NC
9	NC
10	NC
11	GND
12	NC
13	NC
14	NC
15	GND

Note: (Type 2)

1. **When ordering service parts, be sure to refer to "PARTS LIST of EXPLODED VIEWS" or "PCB PARTS LIST".**
2. **Since these are basic circuits, some parts of them or the values of some components may be changed for improvement.**
3. **RESISTORS:**
   Unit: k:kΩ, M:MΩ, or Ω unless otherwise noted.
   Rated power: 1/4W, 1/6W, 1/8W, 1/10W unless otherwise noted.
   Tolerance: (F): ±1%, (G): ±2%, (K): ±10%, (M): ±20% or ±5% unless otherwise noted.
4. **CAPACITORS:**
   Unit: p:pF or μF unless otherwise noted.
   Ratings: capacitor (μF)/ voltage (V) unless otherwise noted.
   Rated voltage: 50V except for electrolytic capacitors.
5. **COILS:**
   Unit: m:mH or μH unless otherwise noted.
6. **VOLTAGE AND CURRENT:**
   ▭ : DC voltage (V) at no input signal unless otherwise noted.
   ⇦ mA or ← mA : DC current at no input signal unless otherwise noted.
7. **OTHERS:**
   - ➡ : Signal route.
   - ⊘ : Adjusting point.
   - ▼ (Red) : Measurement point.
   - The ⚠ mark found on some component parts indicates the importance of the safety factor of the parts. Therefore, when replacing, be sure to use parts of identical designation.
8. **SWITCHES** (Underline indicates switch position):

CLSB UNIT

S6	PUSH SWITCH
S7	PUSH SWITCH
S8	PUSH SWITCH

VCHS UNIT

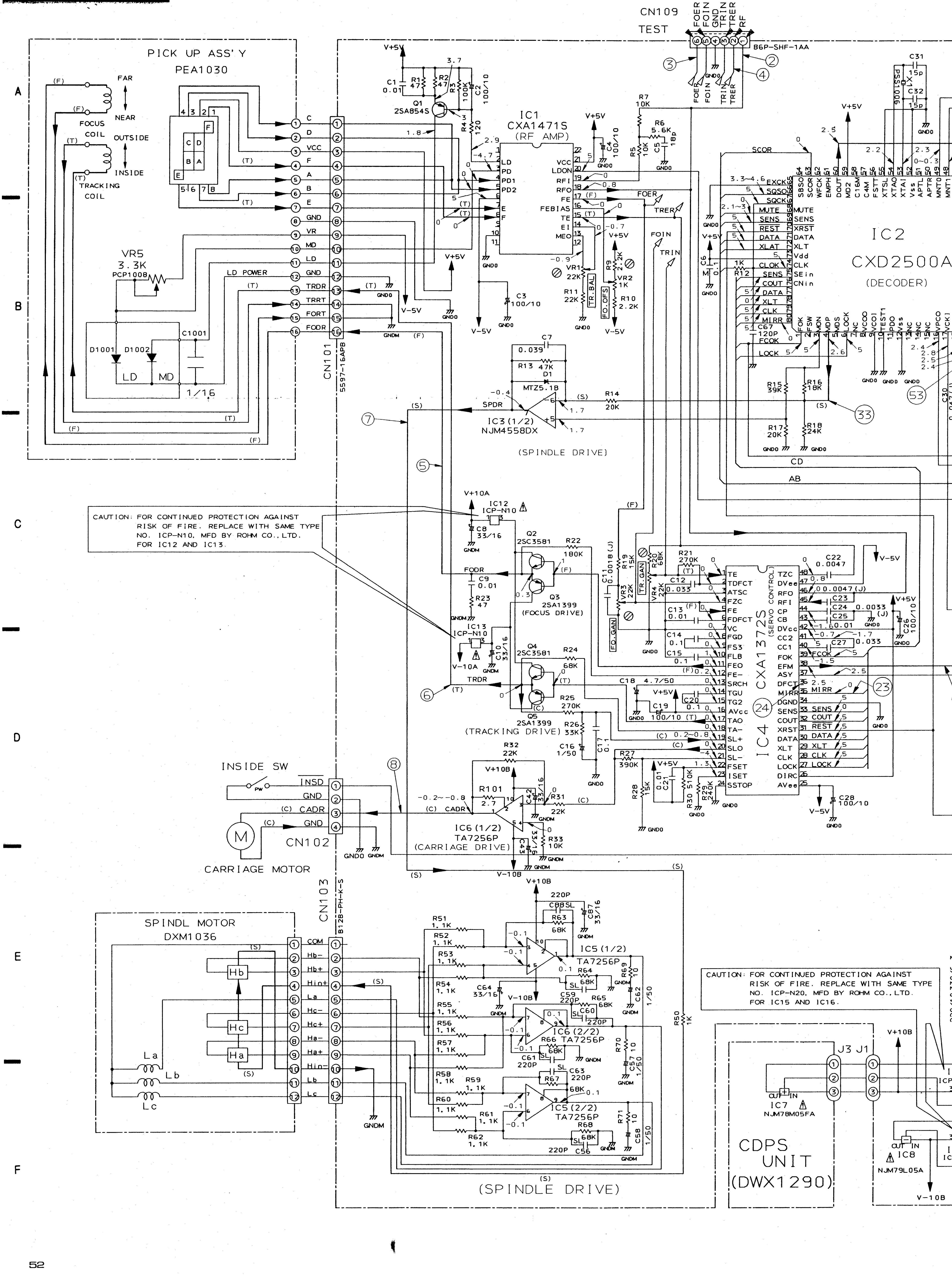
S601	VOLTAGE SELECTOR 220 – 230V/240V

KDSB UNIT

S1	TACT SWITCH
S2	TACT SWITCH
S3	TACT SWITCH
S4	TACT SWITCH
S5	DIP SWITCH

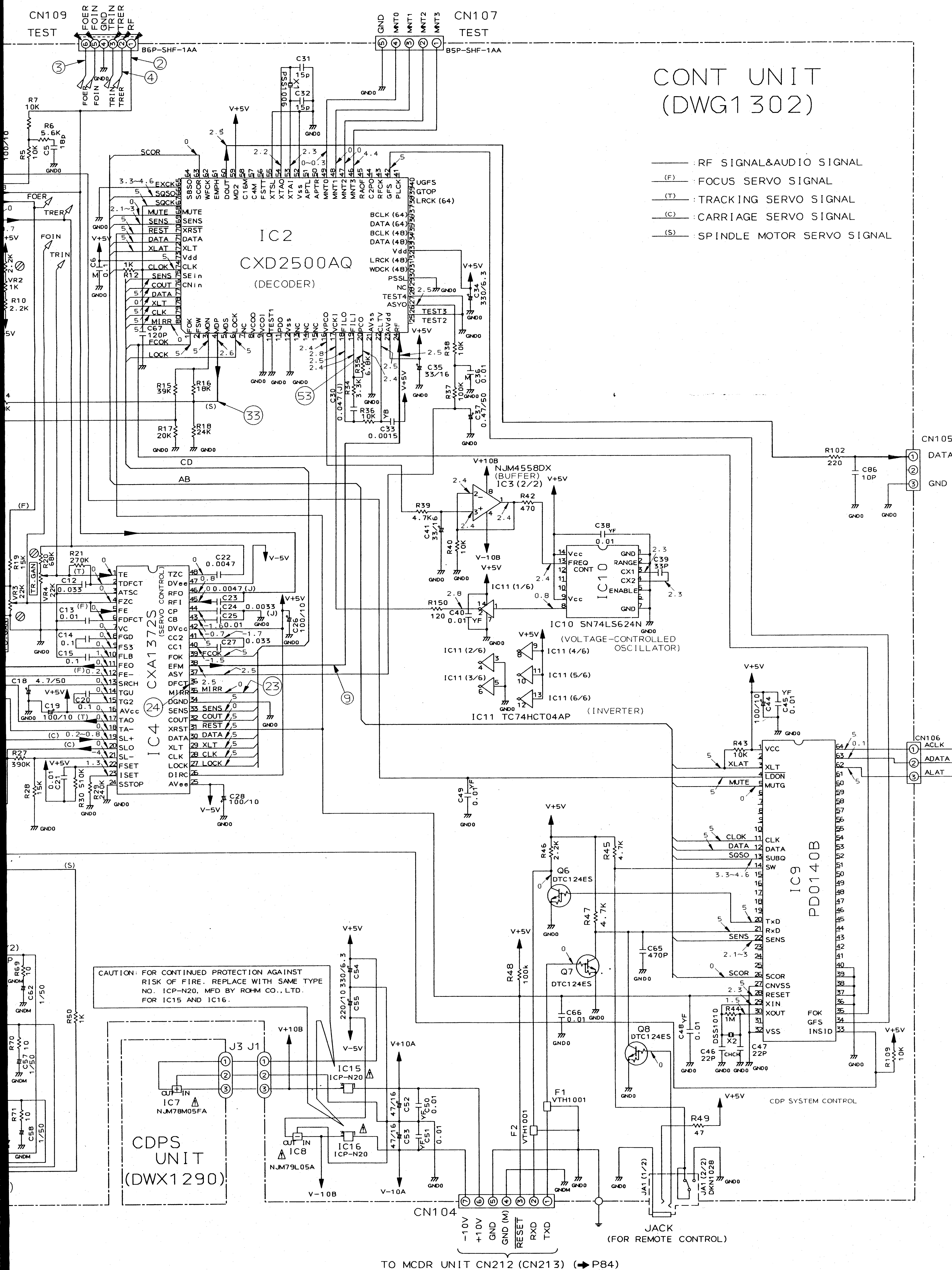
CNCT UNIT

S501	TERMINAL RESISTOR ON/OFF
S502	CONFIG. RS – 232C/RS – 422A

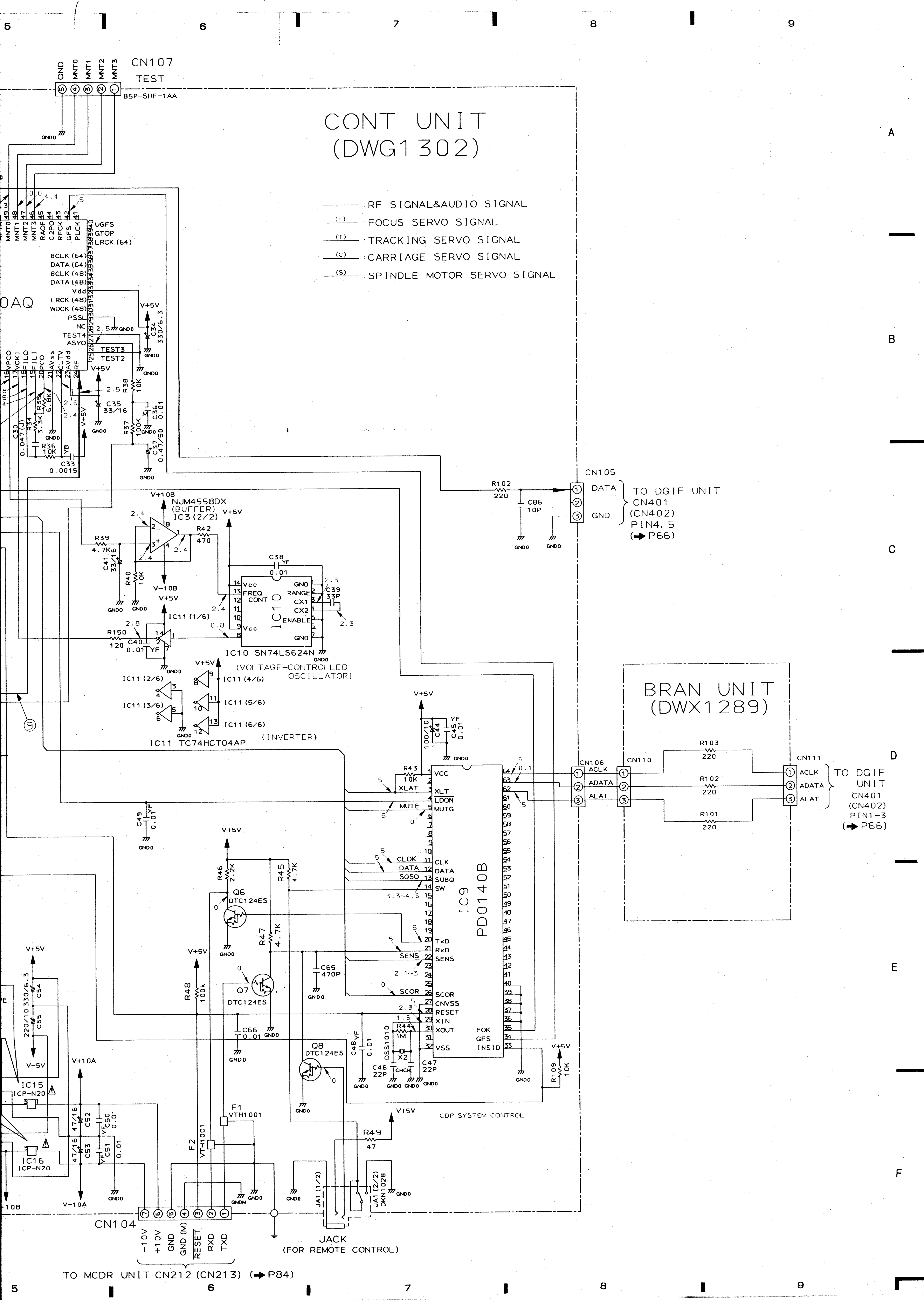

PICK UP ASS'Y
PEA1030
FOCUS COIL
TRACKING COIL
FAR
NEAR
OUTSIDE
INSIDE
VR5 3.3K PCP1008
LD POWER
D1001 D1002
LD MD
C1001 1/16
CN101 5597-16APB
CN109 TEST
FOER FOIN GND TRIN TRER RF
B6P-SHF-1AA
IC1 CXA1471S (RF AMP)
Q1 2SA854S
IC2 CXD2500A (DECODER)
IC3(1/2) NJM4558DX
(SPINDLE DRIVE)
IC12 ICP-N10
IC13 ICP-N10
Q2 2SC3581
Q3 2SA1399
(FOCUS DRIVE)
Q4 2SC3581
Q5 2SA1399
(TRACKING DRIVE)
IC4 CXA1372S (SERVO CONTROL)
INSIDE SW
CN102
CARRIAGE MOTOR
IC6(1/2) TA7256P (CARRIAGE DRIVE)
CN103 B12B-PH-K-S
SPINDL MOTOR DXM1036
IC5(1/2) TA7256P
IC6(2/2) TA7256P
IC5(2/2) TA7256P
(SPINDLE DRIVE)
CDPS UNIT (DWX1290)
J3 J1
IC7 NJM78M05FA
IC8 NJM79L05A
V+10B
V-10B

CAUTION: FOR CONTINUED PROTECTION AGAINST RISK OF FIRE. REPLACE WITH SAME TYPE NO. ICP-N10, MFD BY ROHM CO., LTD. FOR IC12 AND IC13.

CAUTION: FOR CONTINUED PROTECTION AGAINST RISK OF FIRE. REPLACE WITH SAME TYPE NO. ICP-N20, MFD BY ROHM CO., LTD. FOR IC15 AND IC16.


CONT UNIT
(DWG1302)
RF SIGNAL&AUDIO SIGNAL
(F) FOCUS SERVO SIGNAL
(T) TRACKING SERVO SIGNAL
(C) CARRIAGE SERVO SIGNAL
(S) SPINDLE MOTOR SERVO SIGNAL
CN109 TEST
FOER FOIN GND TRIN TRER RF
B6P-SHF-1AA
CN107 TEST
GND MNT0 MNT1 MNT2 MNT3
B5P-SHF-1AA
IC2
CXD2500AQ
(DECODER)
IC4 CXA1372S (SERVO CONTROL)
NJM4558DX (BUFFER) IC3 (2/2)
IC10 SN74LS624N
(VOLTAGE-CONTROLLED OSCILLATOR)
IC11 TC74HCT04AP
(INVERTER)
IC9 PD0140B
CDP SYSTEM CONTROL
CN105 DATA GND
CN106 ACLK ADATA ALAT
Q6 DTC124ES
Q7 DTC124ES
Q8 DTC124ES
IC15 ICP-N20
IC16 ICP-N20
IC7 NJM78M05FA
IC8 NJM79L05A
J3 J1
CDPS UNIT (DWX1290)
F1 VTH1001
F2 VTH1001
JA1 (1/2) JA1 (2/2) DKN1028
JACK (FOR REMOTE CONTROL)
CN104
-10V +10V GND GND (M) RESET RXD TXD
TO MCDR UNIT CN212 (CN213) (➔P84)

CAUTION: FOR CONTINUED PROTECTION AGAINST RISK OF FIRE. REPLACE WITH SAME TYPE NO. ICP-N20, MFD BY ROHM CO., LTD. FOR IC15 AND IC16.

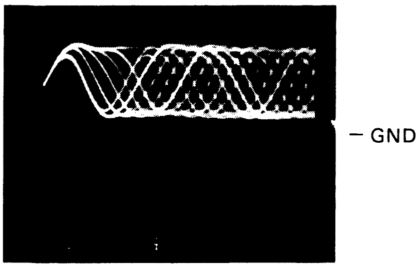

5
6
7
8
9
A
B
C
D
E
F
CN107
TEST
GND
MNT0
MNT1
MNT2
MNT3
B5P-SHF-1AA
GNDO
CONT UNIT
(DWG1302)
RF SIGNAL&AUDIO SIGNAL
(F) FOCUS SERVO SIGNAL
(T) TRACKING SERVO SIGNAL
(C) CARRIAGE SERVO SIGNAL
(S) SPINDLE MOTOR SERVO SIGNAL
UGFS
GTOP
LRCK (64)
BCLK (64)
DATA (64)
BCLK (48)
DATA (48)
Vdd
LRCK (48)
WDCK (48)
PSSL
NC
TEST4
ASYO
TEST3
TEST2
0AQ
V+5V
C34
330/6.3
R38
10K
C35
33/16
C36
0.01
R37
100K
C37
0.47/50
R34
3.3K
R35
6.8K
R36
10K
C30
0.047(J)
C33
0.0015
CN105
R102
220
C86
10P
DATA
GND
TO DGIF UNIT
CN401
(CN402)
PIN4, 5
(➡ P66)
V+10B
NJM4558DX
(BUFFER)
IC3 (2/2)
R39
4.7K
C41
33/16
R40
10K
R42
470
V-10B
C38
0.01
C39
33P
IC10 SN74LS624N
(VOLTAGE-CONTROLLED OSCILLATOR)
FREQ CONT
RANGE
CX1
CX2
ENABLE
Vcc
GND
R150
120
C40
0.01
IC11 (1/6)
IC11 (2/6)
IC11 (3/6)
IC11 (4/6)
IC11 (5/6)
IC11 (6/6)
IC11 TC74HCT04AP
(INVERTER)
BRAN UNIT
(DWX1289)
CN106
CN110
CN111
ACLK
ADATA
ALAT
R103
220
R102
220
R101
220
TO DGIF UNIT
CN401
(CN402)
PIN1-3
(➡ P66)
C44
100/10
C45
0.01
R43
10K
XLAT
MUTE
C49
0.01
V+5V
R46
2.2K
R45
4.7K
Q6
DTC124ES
R47
4.7K
Q7
DTC124ES
R48
100k
C65
470P
C66
0.01
CLOK
DATA
SQSO
SENS
SCOR
VCC
XLT
LDON
MUTG
CLK
SUBQ
SW
TxD
RxD
SCNS
CNVSS
RESET
XIN
XOUT
VSS
FOK
GFS
INSID
IC9
PD0140B
R44
1M
X2
DSS1010
CHCH
C46
22P
C47
22P
C48
0.01
Q8
DTC124ES
R109
10K
CDP SYSTEM CONTROL
F1
VTH1001
F2
VTH1001
R49
47
JA1 (1/2)
JA1 (2/2)
DKN1028
JACK
(FOR REMOTE CONTROL)
C54
220/10 330/6.3
C55
V-5V
V+10A
IC15
ICP-N20
IC16
ICP-N20
C52
47/16
C50
0.01
C53
47/16
C51
0.01
V-10A
CN104
-10V
+10V
GND
GND (M)
RESET
RXD
TXD
TO MCDR UNIT CN212 (CN213) (➡ P84)
GNDM

Wave Forms

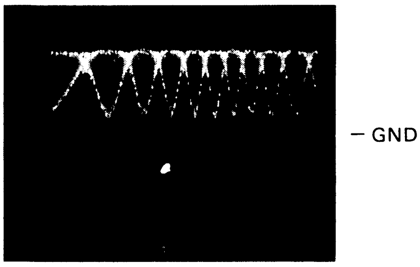
NOTE : The encircled numbers denote measuring points in the schematic diagram.

**1 : FOCUS CLOSS : Press the " 1 + MULTI-SPEED " key without loading the disc.*

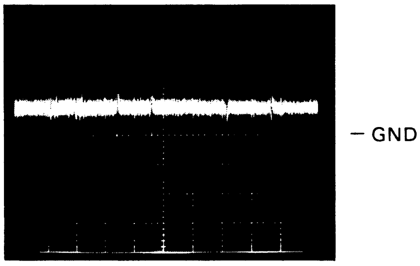
② CN109 Pin 1 : PLAY MODE
(RF)
500mV/div 500nsec/div



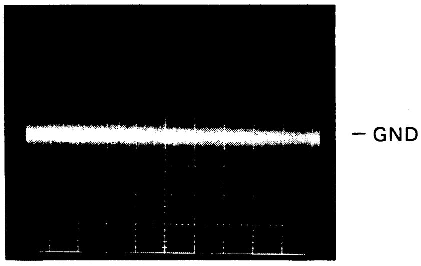
② CN109 Pin 1 : SEARCH MODE
(RF)
500mV/div 200μsec/div



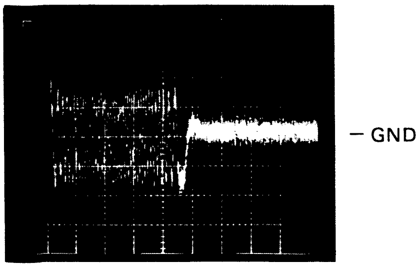
③ CN109 Pin 6 : PLAY MODE
(FOER)
100mV/div 10msec/div



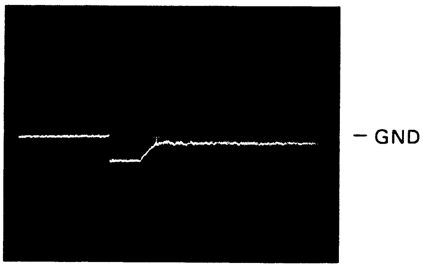
④ CN109 Pin 2 : PLAY MODE
(TRER)
1V/div 10msec/div



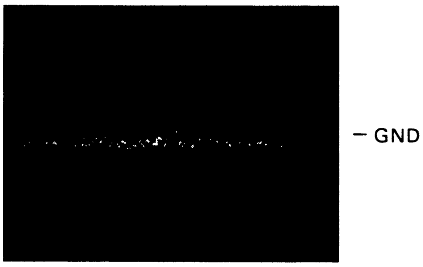
④ CN109 Pin 2 : SEARCH MODE
(TRER)
1V/div 1msec/div



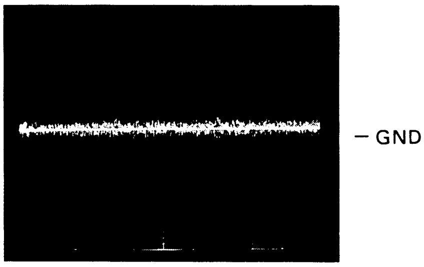
⑤ Q2 Emitter : FOCUS CLOSS (*1) MODE
(FODR)
1V/div 200msec/div



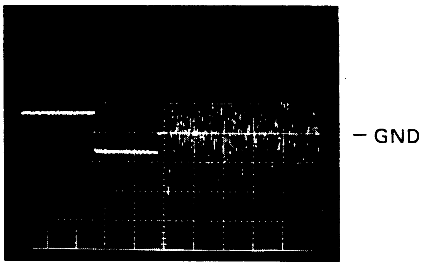
⑤ Q2 Emitter : PLAY MODE
(FODR)
1V/ div 200msec/ div



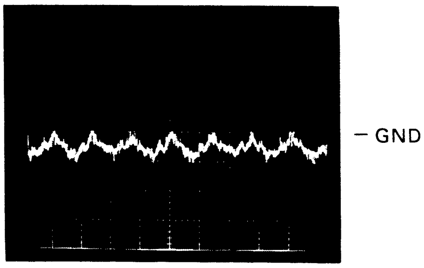
⑥ Q4 Emitter : PLAY MODE
(TRDR)
500mV/div 1msec/div



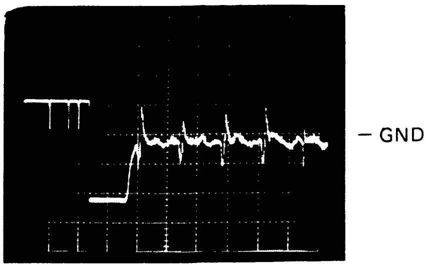
⑥ Q4 Emitter : SEARCH MODE
(TRDR)
500mV/div 1msec/div



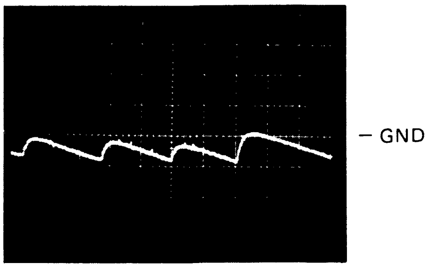
⑦ IC3 Pin 7 : PLAY MODE
(SPDR)
1V/div 50msec/div



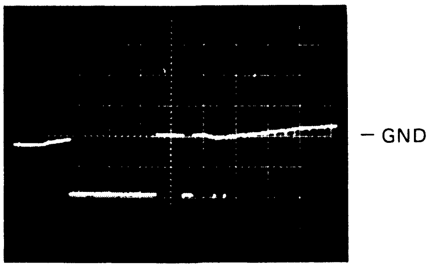
⑦ IC3 Pin 7 : SEARCH MODE
(SPDR)
2V/div 50msec/div



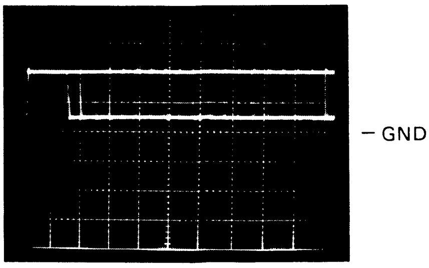
⑧ IC6 Pin 1 : PLAY MODE
(CADR)
1V/div 2S/div



⑧ IC6 Pin 1 : SEARCH MODE
(CADR)
2V/div 200msec/div



⑨ IC4 Pin 38 : PLAY MODE
(EFM)
2V/div 500nsec/div



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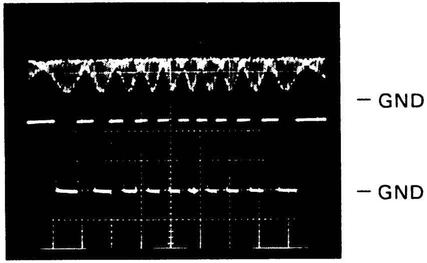
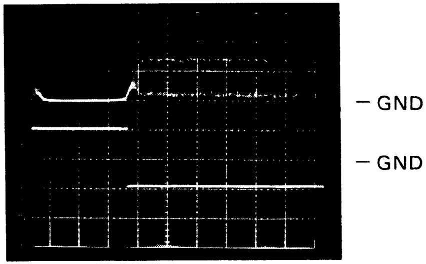
㉓ : TRACK SEARCH MODE
Upper : CN109 Pin 1 (RF) 1V/div
Lower : IC4 Pin 35 (MIRR)
2V/div 200μsec/div



㉔ : PLAY MODE
Upper : CN109 Pin 1 (RF) 1V/div
Lower : IC4 Pin 36 (DFCT)
5V/div 200μsec/div



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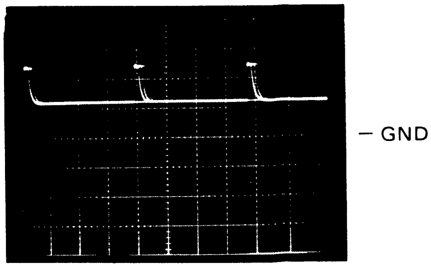
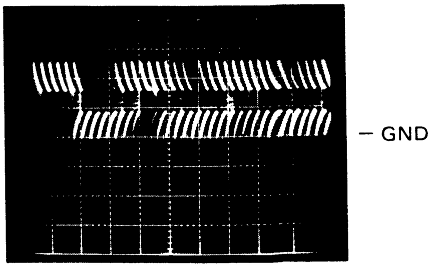
㉝ IC2 Pin 4 : PLAY MODE
(MDP)
2V/div 2μsec/div



(53) IC2 Pin 20 : PLAY MODE
(PCO)
2V/div 10μsec/div



This P. C. B connection diagram is viewed from the parts mounted side.

CONT

IC1

Pin No	Voltage
1	
2	2.9
3	-4.7
4, 5	0
6	-5
7, 8	0
9-12	
13	-0.9
14	-0.7
15-17	0
18	0.8
19	0
20	5
21, 22	

IC2

Pin No	Voltage
1	5
2	
3	5
4	2.6
5	
6	5
7-15	
16	2.4
17	2.8
18	2.5
19, 20	2.4
21	
22	2.5
23	
24	2.5
25, 26	
27	2.5
28-41	
42	5
43-45	
46	4.4
47, 48	0
49	0-0.3
50-52	
53	2.3
54	2.2
55-59	
60	2.5
61, 62	
63	0
64	

IC3

Pin No	Voltage
1-3	2.4
4	
5, 6	1.7
7	-0.4
8	

IC4

Pin No	Voltage
1, 2	0
3	
4-6	0
7	
8-10	0
11	1
12	0
13	0.2
14, 15	0
16	
17-19	0
20	0.2-0.8
21	0
22	-4
23	1.3
24, 25	
26-31	5
32	0
33	5
34	
35	0
36	
37, 38	2.5
39	5
40	-1.5
41	-1.7
42	5
43	-0.7
44	-1.6
45	0
46	0.8
47	
48	0

IC5

Pin No	Voltage
1, 2	0.1
3, 4	-0.1
5	
6, 7	-0.1
8, 9	0.1
10	

IC6

PIn No	Voltage
1	-0.2--0.8
2	
3, 4	0
5	
6, 7	-0.1
8, 9	0.1
10	

IC9

Pin No	Voltage
1, 2	
3, 4	5
5	0
6-10	
11, 12	5
13	3.3-4.6
14-19	
20, 21	5
22	2.1-3
23-25	
26	0
27	
28	5
29	2.3
30	1.5
31-33	
34	5
35-61	
62	0
63	0.1
64	5

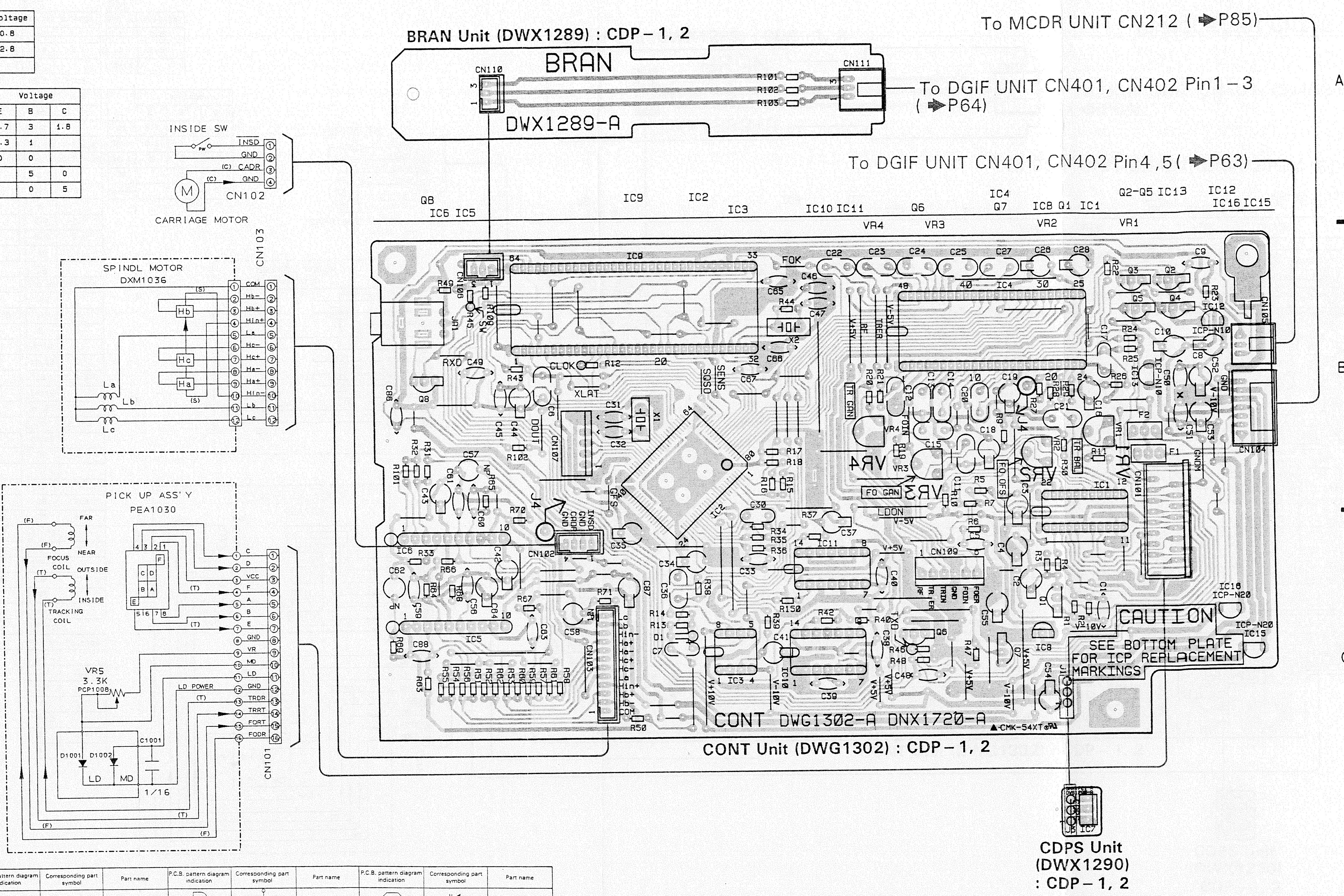
IC10

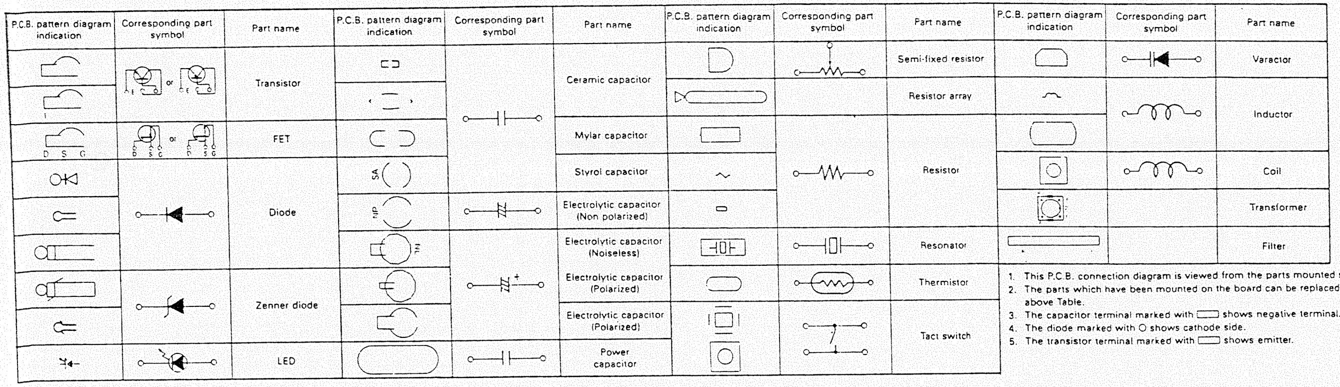
PIn No	Voltage
1, 2	
3, 4	2.3
5-7	
8	0.8
9-12	
13	2.4
14	

IC11

Pin No	Voltage
1	0.8
2	2.8
3-14	

	Voltage		
	E	B	C
Q1	3.7	3	1.8
Q2, 3	0.3	1	
Q4, 5	0	0	
Q6		5	0
Q7, 8		0	5

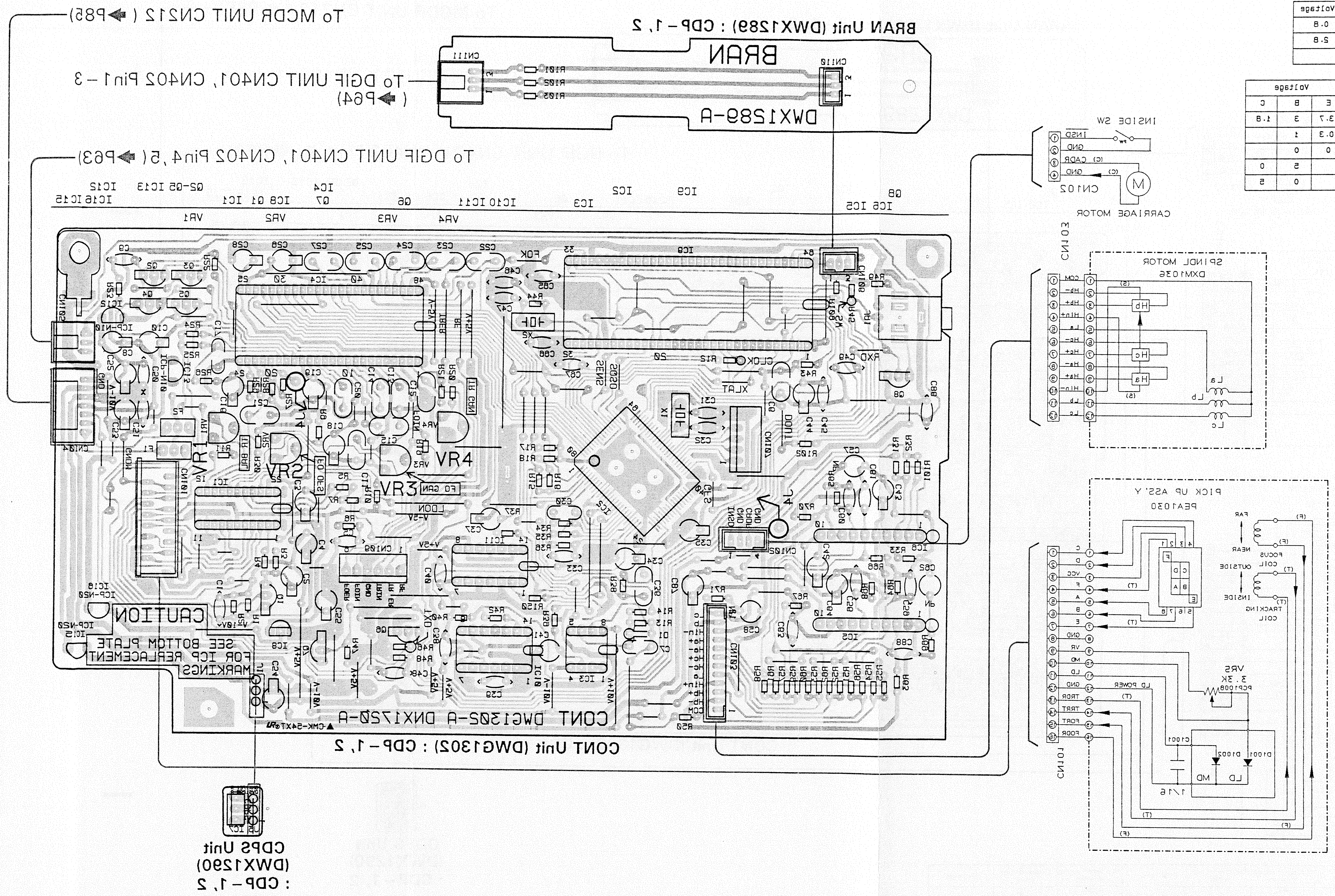

BRAN Unit (DWX1289) : CDP－1, 2
BRAN
CN110
CN111
R101
R102
R103
DWX1289-A
To MCDR UNIT CN212 (➡P85)
To DGIF UNIT CN401, CN402 Pin1－3 (➡P64)
To DGIF UNIT CN401, CN402 Pin4, 5 (➡P63)
INSIDE SW
INSD
GND
CADR
GND
CARRIAGE MOTOR
CN102
CN103
SPINDL MOTOR
DXM1036
Hb
Hc
Ha
La
Lb
Lc
COM
Hb-
Hb+
Hin+
La
Hc-
Hc+
Ha-
Ha+
Hin-
Lb
Lc
PICK UP ASS'Y
PEA1030
FAR
NEAR
FOCUS COIL
OUTSIDE
INSIDE
TRACKING COIL
VR5
3.3K
PCP1008
LD POWER
D1001
D1002
C1001
LD
MD
1/16
C
D
VCC
F
A
B
E
GND
VR
MD
LD
GND
TRDR
TRRT
FORT
FODR
CN101
Q8
IC6 IC5
IC9
IC2
IC3
IC10 IC11
Q6
IC4
Q7
IC8 Q1 IC1
Q2-Q5 IC13
IC12
IC16 IC15
VR4
VR3
VR2
VR1
FOK
CLOK
XLAT
SQSO
SENS
DOUT
GFS
TR GAN
FO GAN
FO OFS
TR BAL
LDON
CN104
CN105
CN107
CN108
CN109
CAUTION
SEE BOTTOM PLATE FOR ICP REPLACEMENT MARKINGS
CONT DWG1302-A DNX1720-A
CMK-54XT
CONT Unit (DWG1302) : CDP－1, 2
IC7
CDPS Unit (DWX1290) : CDP－1, 2



P.C.B. pattern diagram indication	Corresponding part symbol	Part name	P.C.B. pattern diagram indication	Corresponding part symbol	Part name	P.C.B. pattern diagram indication	Corresponding part symbol	Part name	P.C.B. pattern diagram indication	Corresponding part symbol	Part name
		Transistor			Ceramic capacitor			Semi-fixed resistor			Varactor
								Resistor array			Inductor
		FET			Mylar capacitor			Resistor			
		Diode	SA		Styrol capacitor						Coil
			NP		Electrolytic capacitor (Non polarized)						Transformer
			NL		Electrolytic capacitor (Noiseless)			Resonator			Filter
		Zenner diode			Electrolytic capacitor (Polarized)			Thermistor			
					Electrolytic capacitor (Polarized)			Tact switch			
		LED			Power capacitor						

1. This P.C.B. connection diagram is viewed from the parts mounted side.
2. The parts which have been mounted on the board can be replaced with those shown with the corresponding wiring symbols listed in the above Table.
3. The capacitor terminal marked with ▭ shows negative terminal.
4. The diode marked with ○ shows cathode side.
5. The transistor terminal marked with ▭ shows emitter.

This P. C. B. connection diagram is viewed from the foil side.


To MCDR UNIT CN212 (➡P85)
BRAN Unit (DWX1289) : CDP-1, 2
BRAN
DWX1289-A
CN111
CN110
R101
R102
R103
To DGIF UNIT CN401, CN402 Pin1-3 (➡P64)
To DGIF UNIT CN401, CN402 Pin4, 5 (➡P63)
IC12
IC16 IC15
IC13
Q2-Q5
IC4
IC8 Q1 IC1
Q7
Q6
IC10 IC11
IC3
IC2
IC9
Q8
IC6 IC5
VR1
VR2
VR3
VR4
CAUTION
SEE BOTTOM PLATE FOR ICP REPLACEMENT MARKINGS
CONT DWG1302-A DNX1720-A
CONT Unit (DWG1302) : CDP-1, 2
CDPS Unit (DWX1290) : CDP-1, 2
INSIDE SW
CN102
CARRIAGE MOTOR
CN103
SPINDL MOTOR
DXM1036
PICK UP ASS'Y
PEA1030
CN101
FOCUS COIL
TRACKING COIL
VR5
3.3K
LD POWER
MD
LD

CONT
IC1

Pin No	Voltage
1	
2	2.9
3	-4.7
4.5	0
6	-5
7.8	0
9-12	
13	-0.9
14	-0.7
15-17	0
18	0.8
19	0
20	5
21.22	

IC2

Pin No	Voltage
1	5
2	
3	5
4	2.6
5	
6	5
7-15	
16	2.4
17	2.8
18	2.5
19.20	2.4
21	
22	2.5
23	
24	2.5
25.26	
27	2.5
28-41	
42	5
43-45	
46	4.4
47.48	0
49	0-0.3
50-52	
53	2.3
54	2.2
55-59	
60	2.5
61.62	
63	0
64	

IC3

Pin No	Voltage
1-3	2.4
4	
5.6	1.7
7	-0.4
8	

IC4

Pin No	Voltage
1.2	0
3	
4-6	0
7	
8-10	0
11	1
12	0
13	0.2
14.15	0
16	
17-19	0
20	0.2-0.8
21	0
22	-4
23	1.3
24.25	
26-31	5
32	0
33	5
34	
35	0
36	
37.38	2.5
39	5
40	-1.5
41	-1.7
42	5
43	-0.7
44	-1.6
45	0
46	0.8
47	
48	0

IC5

Pin No	Voltage
1.2	0.1
3.4	-0.1
5	
6.7	-0.1
8.9	0.1
10	

IC6

Pin No	Voltage
1	-0.2--0.8
2	
3.4	0
5	
6.7	-0.1
8.9	0.1
10	

IC9

Pin No	Voltage
1.2	
3.4	5
5	0
6-10	
11.12	5
13	3.3-4.6
14-19	
20.21	5
22	2.1-3
23-25	
26	0
27	
28	5
29	2.3
30	1.5
31-33	
34	5
35-61	
62	0
63	0.1
64	5

IC10

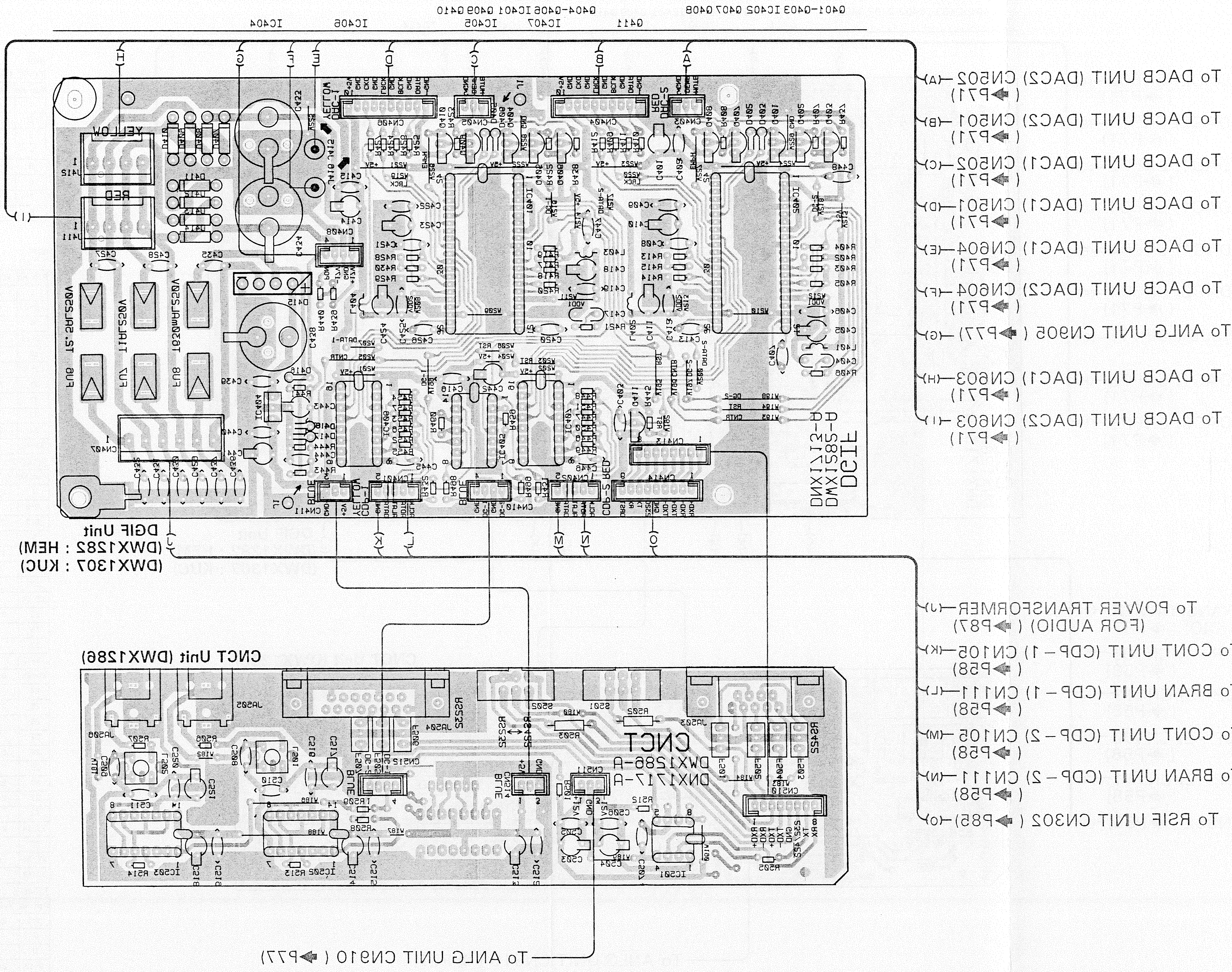
Pin No	Voltage
1.2	
3.4	2.3
5-7	
8	0.8
9-12	
13	2.4
14	

IC11

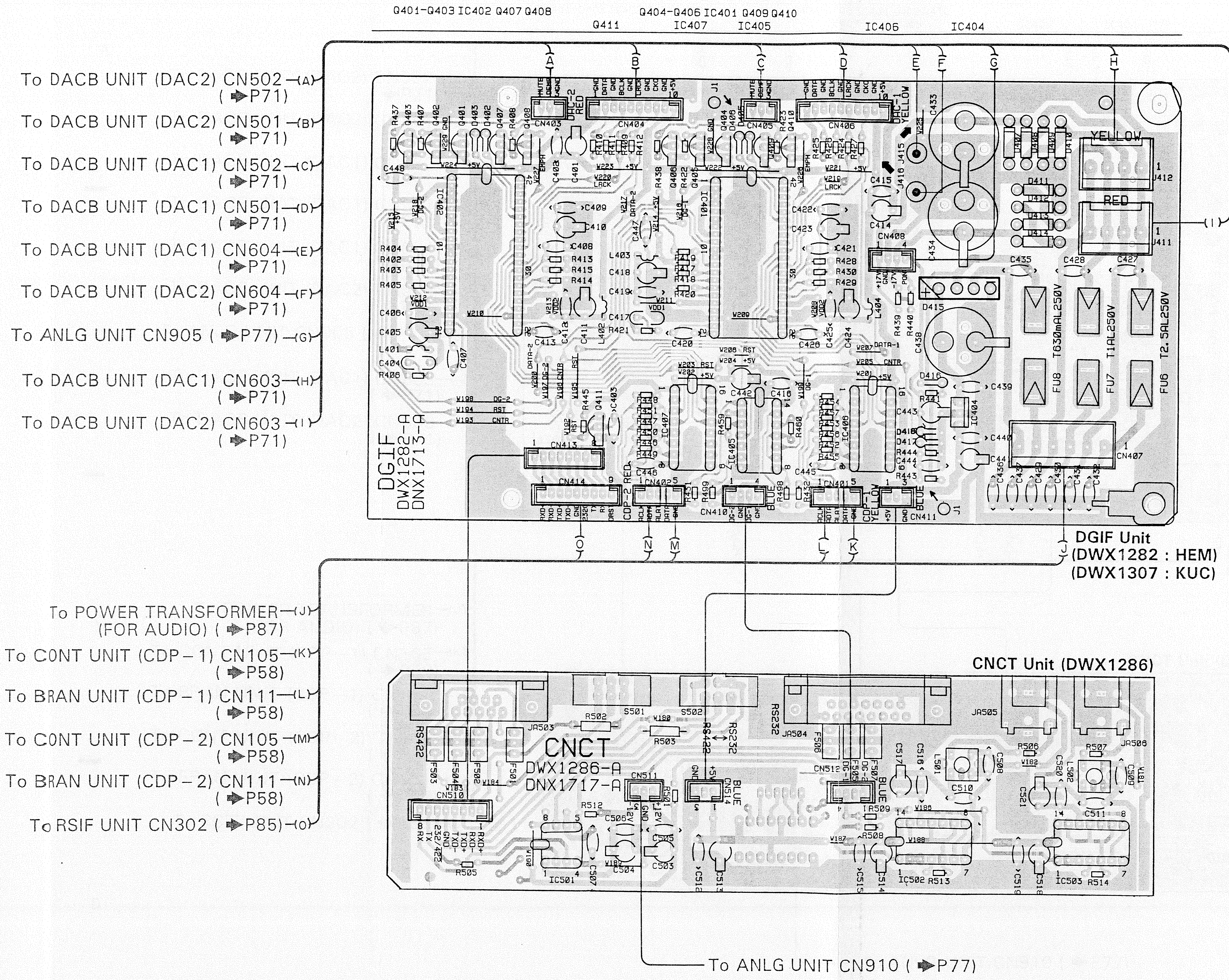
Pin No	Voltage
1	0.8
2	2.8
3-14	

	Voltage		
	E	B	C
Q1	3.7	3	1.8
Q2.3	0.3	1	
Q4.5	0	0	
Q6		5	0
Q7.8		0	5

7.3 DGIF UNIT AND CNCT UNIT



This P. C. B. connection diagram is viewed from the foil side.


Q401–Q403 IC402 Q407 Q408
Q411
Q404–Q406 IC401 Q409 Q410
IC407
IC405
IC406
IC404
To DACB UNIT (DAC2) CN502 (➡P71) A
To DACB UNIT (DAC2) CN501 (➡P71) B
To DACB UNIT (DAC1) CN502 (➡P71) C
To DACB UNIT (DAC1) CN501 (➡P71) D
To DACB UNIT (DAC1) CN604 (➡P71) E
To DACB UNIT (DAC2) CN604 (➡P71) F
To ANLG UNIT CN905 (➡P77) G
To DACB UNIT (DAC1) CN603 (➡P71) H
To DACB UNIT (DAC2) CN603 (➡P71) I
DGIF
DWX1282-A
DNX1713-A
YELLOW
RED
DGIF Unit
(DWX1282 : HEM)
(DWX1307 : KUC)
To POWER TRANSFORMER (FOR AUDIO) (➡P87) J
To CONT UNIT (CDP-1) CN105 (➡P58) K
To BRAN UNIT (CDP-1) CN111 (➡P58) L
To CONT UNIT (CDP-2) CN105 (➡P58) M
To BRAN UNIT (CDP-2) CN111 (➡P58) N
To RSIF UNIT CN302 (➡P85) O
CNCT Unit (DWX1286)
CNCT
DWX1286-A
DNX1717-A
To ANLG UNIT CN910 (➡P77)

This P. C. B connection diagram is viewed from the parts mounted side.

CNCT

IC501

Pin No	Voltage
1	
2	4.1
3	4.9
4	
5	-2.7
6	
7	-11
8	

IC502

Pin No	Voltage
1-6	2.5
7	
8-13	2.5
14	

DGIF

IC401

Pin No	Voltage
1	2.5
2-8	
9	1.5
10, 11	
12	5
13-30	
31	2.4
32	0
33	
34	2.5
35-42	

IC406

Pin No	Voltage
1, 2	
3	5
4	0
5	5
6	0.1
7	5
8-12	
13	2.5
14	0
15	2.4
16	

IC402

Pin No	Voltage
1	2.5
2-5	
6, 7	2.5
8	
9	1.5
10, 11	
12	5
13, 14	
15	0.7
16	2
17	5
18, 19	
20-23	0.7
24	
25	2.2
26	5
27	2
28	0.7
29	2
30	2.2
31	2.4
32	0
33, 34	2.5
35	
36-38	0
39-42	

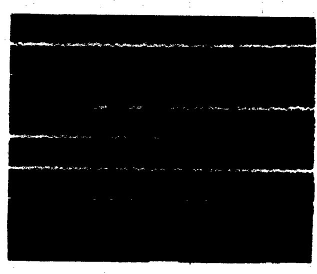
IC407

Pin No	Voltage
1, 2	
3	5
4-12	
13	2.5
14	0
15	2.4
16	

	Voltage		
	E	B	C
Q401		0	3.7
Q402		3.7	0
Q403		0	5
Q404		0	3.7
Q405		3.7	0
Q406		0	5
Q407		5	-12
Q408		0	5
Q409		5	-12
Q410			5
Q411		0	5

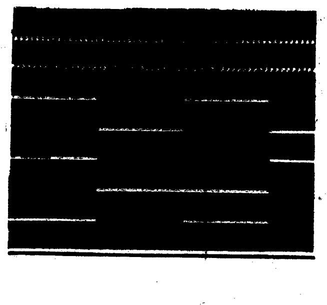
IC405

Pin No	Voltage
1-6	2.5
7	
8	
9-13	2.5
14	



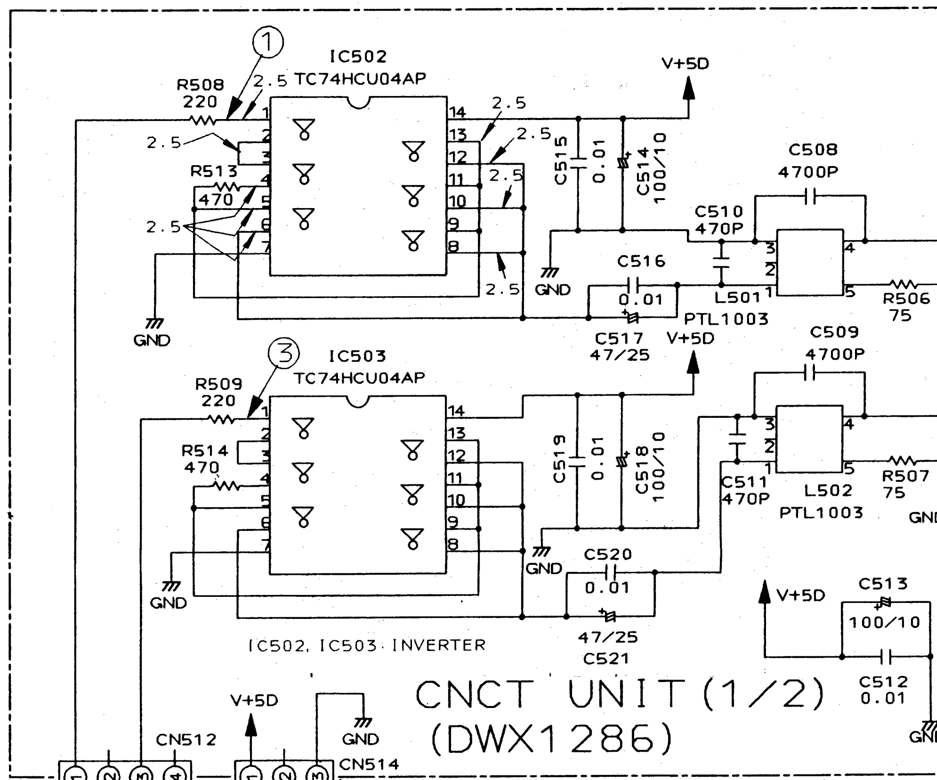
DGIF UNIT
IC406, IC407 (PD0026A)
Fade-out Mode
5V/div., 20μsec/div.

① ALAT (Pin 7)
② ADATA (Pin 6)
③ ACLK (Pin 5)

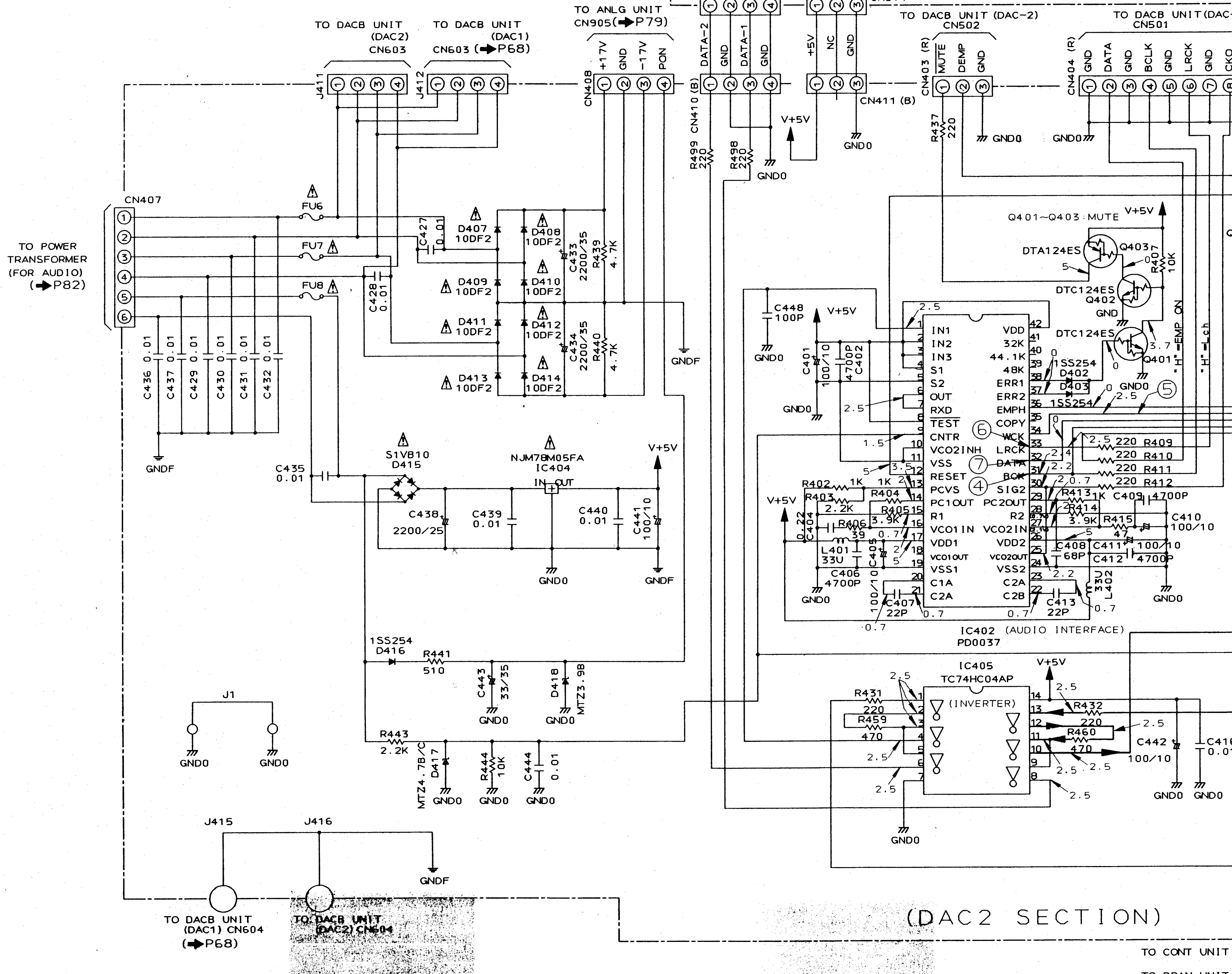


DGIF UNIT
IC401, IC402 (PD0037)
Play Mode
5V/div., 2μsec/div.

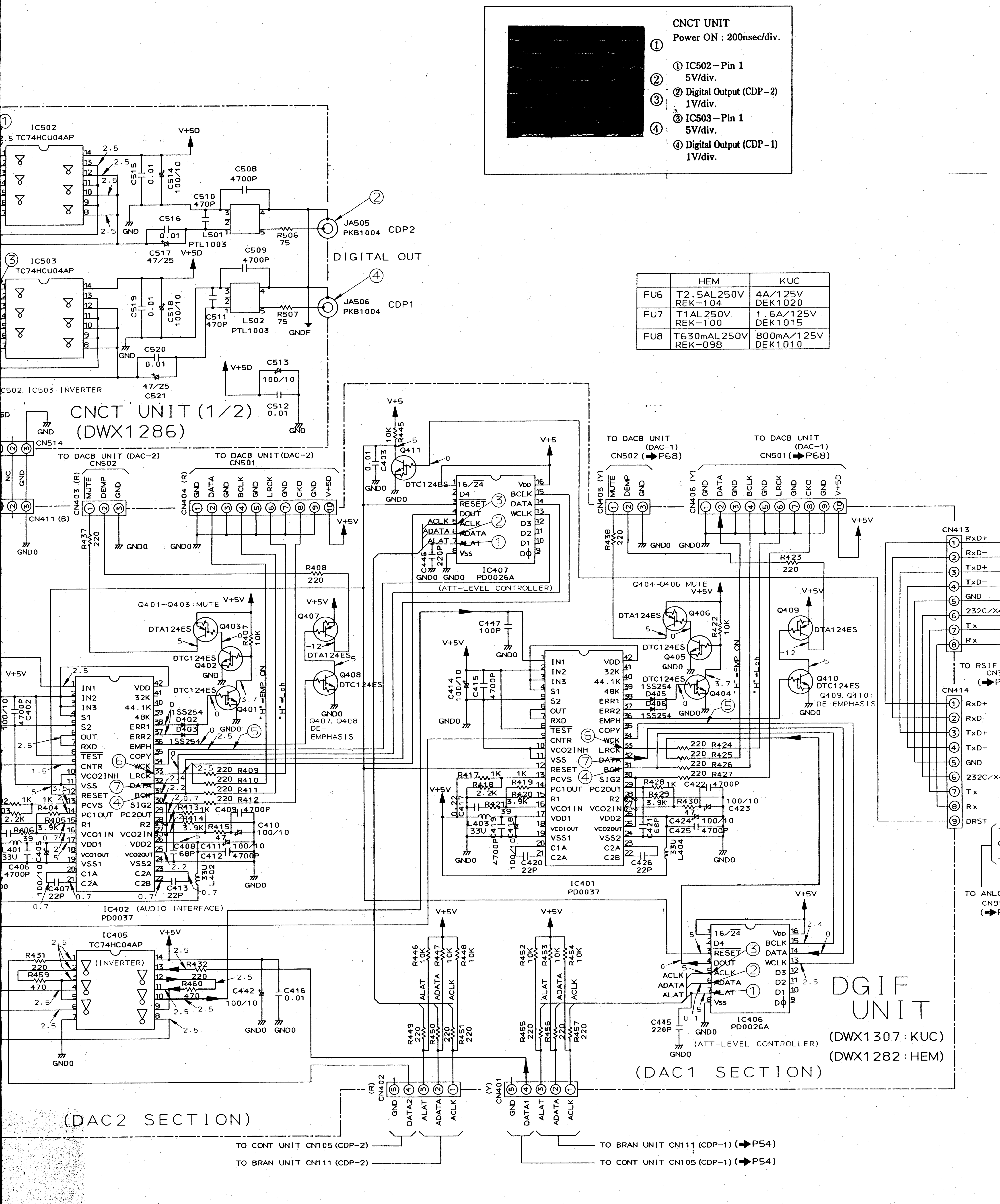
④ BCK (Pin 31)
⑤ WCK (Pin 34)
⑥ LRCK (Pin 33)
⑦ DATA (Pin 32)



IC502
TC74HCU04AP
IC503
TC74HCU04AP
R508 220
R513 470
R509 220
R514 470
C515 0.01
C514 100/10
C516 0.01
C517 47/25
C518 100/10
C519 0.01
C520 0.01
C521 47/25
C508 4700P
C509 4700P
C510 470P
C511 470P
L501 PTL1003
L502 PTL1003
R506 75
R507 75
C513 100/10
C512 0.01
V+5D
GND
IC502, IC503: INVERTER
CNCT UNIT (1/2)
(DWX1286)



TO DACB UNIT (DAC2) CN603
TO DACB UNIT (DAC1) CN603 (➡P68)
TO ANLG UNIT CN905(➡P79)
J411
J412
CN408
+17V GND −17V PON
CN512
CN514
CN410 (B)
DATA-2 GND DATA-1 GND
CN411 (B)
+5V NC GND
TO DACB UNIT (DAC-2) CN502
CN403 (R)
MUTE DEMP GND
TO DACB UNIT (DAC-1) CN501
CN404 (R)
GND DATA GND BCLK GND LRCK GND CKO
R499 220
R498 220
R437 220
CN407
TO POWER TRANSFORMER (FOR AUDIO) (➡P82)
FU6
FU7
FU8
C427 0.01
C428 0.01
D407 10DF2
D408 10DF2
D409 10DF2
D410 10DF2
D411 10DF2
D412 10DF2
D413 10DF2
D414 10DF2
C433 2200/35
C434 2200/35
R439 4.7K
R440 4.7K
C436 0.01
C437 0.01
C429 0.01
C430 0.01
C431 0.01
C432 0.01
GNDF
C435 0.01
S1VB10 D415
NJM78M05FA IC404
C438 2200/25
C439 0.01
C440 0.01
C441 100/10
1SS254 D416
R441 510
C443 33/35
D418 MTZ3.9B
R443 2.2K
D417 MTZ4.7B/C
R444 10K
C444 0.01
J1
J415
J416
TO DACB UNIT (DAC1) CN604 (➡P68)
TO DACB UNIT (DAC2) CN604
Q401~Q403: MUTE
DTA124ES Q403
DTC124ES Q402
DTC124ES Q401
R407 10K
C448 100P
C401 100/10
C402 470P
1SS254 D402
D403 1SS254
IN1 IN2 IN3 S1 S2 OUT RXD TEST CNTR VCO2INH VSS RESET PCVS PC1OUT R1 VCO1IN VDD1 VCO1OUT VSS1 C1A C2A
VDD 32K 44.1K 48K ERR1 ERR2 EMPH COPY WCK LRCK DATA BCK SIG2 PC2OUT R2 VCO2IN VDD2 VCO2OUT VSS2 C2A C2B
R409 220
R410 220
R411 220
R412 220
R402 1K
R403 2.2K
R404 1K
R405 3.9K
R406 39
R413 1K
R414 3.9K
R415 47
C409 4700P
C410 100/10
C411 100/10
C412 4700P
C408 68P
C413 22P
L402 33U
L401 33U
C403 0.22
C405 5
C406 4700P
C407 22P
IC402 (AUDIO INTERFACE) PD0037
IC405 TC74HC04AP (INVERTER)
R431 220
R459 470
R432 220
R460 470
C442 100/10
GNDD
(DAC2 SECTION)
TO CONT UNIT
TO BRAN UNIT



①
②
③
④
IC502
TC74HCU04AP
IC503
TC74HCU04AP
V+5D
C515
0.01
C514
100/10
C508
4700P
C510
470P
C516
0.01
L501
PTL1003
R506
75
JA505
PKB1004
CDP2
DIGITAL OUT
C517
47/25
C509
4700P
C519
0.01
C518
100/10
C511
470P
L502
PTL1003
R507
75
JA506
PKB1004
CDP1
GNDF
C520
0.01
47/25
C521
C513
100/10
C512
0.01
IC502, IC503 : INVERTER
CNCT UNIT (1/2)
(DWX1286)
CN514
CN411 (B)
NC
GND
TO DACB UNIT (DAC-2) CN502
TO DACB UNIT (DAC-2) CN501
CN403 (R)
MUTE
DEMP
GND
CN404 (R)
DATA
BCLK
LRCK
CKO
V+5D
R437
220
GND0
V+5V
V+5
R445
10K
C403
0.01
Q411
DTC124ES
IC407
PD0026A
(ATT-LEVEL CONTROLLER)
16/24
D4
RESET
DOUT
ACLK
ADATA
ALAT
VSS
VDD
BCLK
DATA
WCLK
D3
D2
D1
DΦ
C446
220P
R408
220
Q401~Q403 : MUTE
DTA124ES
Q403
DTC124ES
Q402
Q401
R407
10K
"H"-EMP ON
"H"-ch
Q407
Q408
Q407, Q408 : DE-EMPHASIS
IC402 (AUDIO INTERFACE)
PD0037
IN1
IN2
IN3
S1
S2
OUT
RXD
TEST
CNTR
VCO2INH
VSS
RESET
PCVS
PC1OUT
R1
VCO1IN
VDD1
VCO1OUT
VSS1
C1A
C2A
32K
44.1K
48K
ERR1
ERR2
EMPH
COPY
WCK
LRCK
BCK
SIG2
PC2OUT
R2
VCO2IN
VDD2
VCO2OUT
VSS2
C2B
1SS254
D402
D403
R409 220
R410 220
R411 220
R412 220
R413 1K
R414 3.9K
R415 47
C409 4700P
C410 100/10
C411 100/10
C412 4700P
C408 68P
C413 22P
L402 33U
R404 1K
R405 39
L401 33U
C406 4700P
C407 22P
C402 4700P
IC405
TC74HC04AP
(INVERTER)
R431 220
R459 470
R432 220
R460 470
C442 100/10
C416 0.01
C447 100P
C414 100/10
C415 4700P
IC401
PD0037
R417 1K
R418 2.2K
R419 1K
R420 3.9K
R421 39
C417 0.22
L403 33U
C419 4700P
C418 100/10
C420 22P
R424 220
R425 220
R426 220
R427 220
R428 1K
R429 3.9K
R430 47
C422 4700P
C423 100/10
C421 68P
C424 100/10
C425 4700P
L404 33U
C426 22P
Q404~Q406 : MUTE
Q406
Q405
Q404
R422 10K
D405
D406
TO DACB UNIT (DAC-1) CN502 (➡P68)
TO DACB UNIT (DAC-1) CN501 (➡P68)
CN405 (Y)
CN406 (Y)
R438 220
R423 220
Q409
Q410
Q409, Q410 : DE-EMPHASIS
CN413
RxD+
RxD−
TxD+
TxD−
232C/X
Tx
Rx
TO RSIF
CN414
DRST
TO ANLG
IC406
PD0026A
(ATT-LEVEL CONTROLLER)
C445 220P
R446 10K
R447 10K
R448 10K
R449 220
R450 220
R451 220
R452 10K
R453 10K
R454 10K
R455 220
R456 220
R457 220
DGIF UNIT
(DWX1307 : KUC)
(DWX1282 : HEM)
(DAC1 SECTION)
(DAC2 SECTION)
CN402 (R)
DATA2
CN401 (Y)
DATA1
TO CONT UNIT CN105 (CDP-2)
TO BRAN UNIT CN111 (CDP-2)
TO BRAN UNIT CN111 (CDP-1) (➡P54)
TO CONT UNIT CN105 (CDP-1) (➡P54)

CNCT UNIT
Power ON : 200nsec/div.

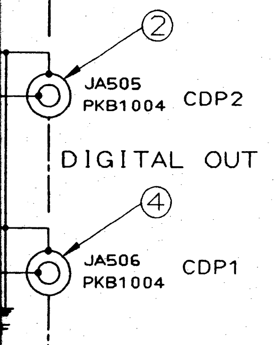
① IC502 – Pin 1
5V/div.
② Digital Output (CDP – 2)
1V/div.
③ IC503 – Pin 1
5V/div.
④ Digital Output (CDP – 1)
1V/div.

	HEM	KUC
FU6	T2.5AL250V REK-104	4A/125V DEK1020
FU7	T1AL250V REK-100	1.6A/125V DEK1015
FU8	T630mAL250V REK-098	800mA/125V DEK1010

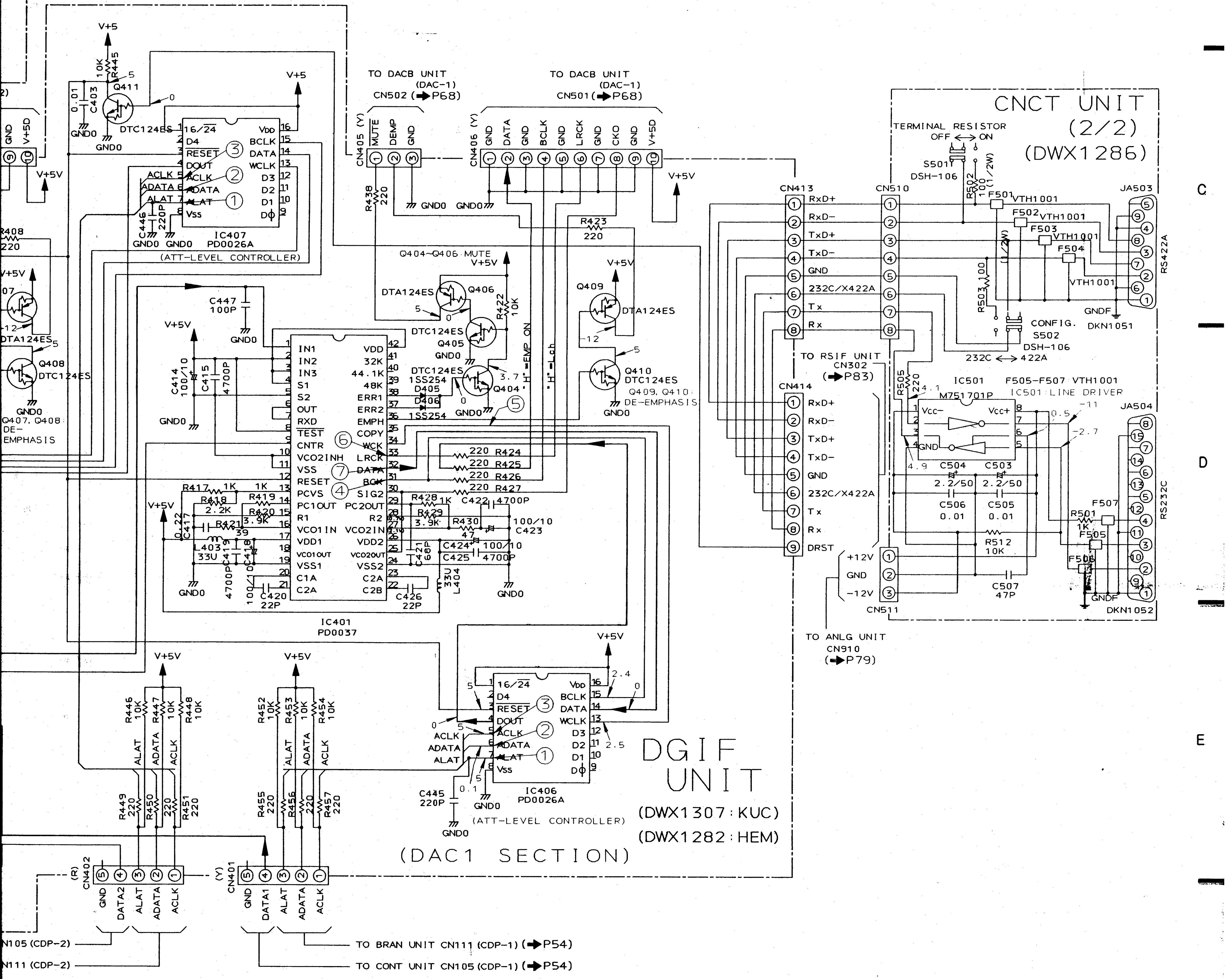
CNCT UNIT
Power ON : 200nsec/div.

① IC502 – Pin 1
5V/div.
② Digital Output (CDP-2)
1V/div.
③ IC503 – Pin 1
5V/div.
④ Digital Output (CDP-1)
1V/div.

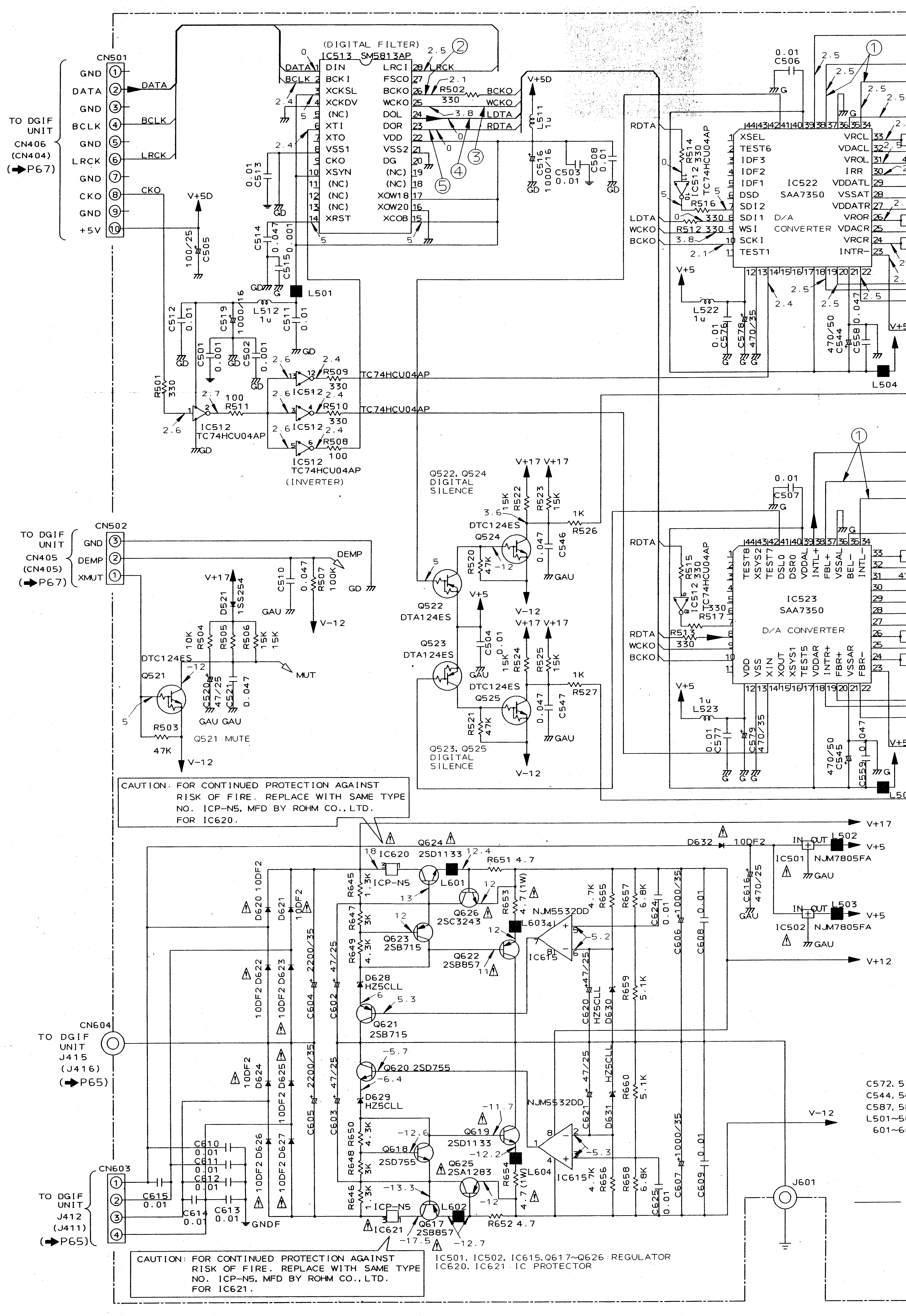
—— : AUDIO SIGNAL


②
JA505
PKB1004
CDP2
DIGITAL OUT
④
JA506
PKB1004
CDP1

	HEM	KUC
FU6	T2.5AL250V REK-104	4A/125V DEK1020
FU7	T1AL250V REK-100	1.6A/125V DEK1015
FU8	T630mAL250V REK-098	800mA/125V DEK1010


V+5
R445 10K
Q411
DTC124ES
C403 0.01
GNDO
V+5
IC407
PD0026A
(ATT-LEVEL CONTROLLER)
16/24
D4
RESET
DOUT
ACLK
ADATA
ALAT
VSS
VDD
BCLK
DATA
WCLK
D3
D2
D1
DØ
C446 220P
R408 220
Q407
Q408
DTC124ES
Q407, Q408 DE-EMPHASIS
TO DACB UNIT (DAC-1) CN502 (➡P68)
TO DACB UNIT (DAC-1) CN501 (➡P68)
CN405 (Y)
MUTE
DEMP
GND
CN406 (Y)
GND
DATA
GND
BCLK
GND
LRCK
GND
CKO
GND
V+5D
R438 220
R423 220
Q404~Q406 MUTE
DTA124ES
Q406
R422 10K
DTC124ES
Q405
Q404
1SS254
D405
D406
"H"=EMP ON
"H"=Lch
Q409
DTA124ES
Q410
DTC124ES
Q409, Q410 : DE-EMPHASIS
C447 100P
C414 100/10
C415 4700P
IC401
PD0037
IN1
IN2
IN3
S1
S2
OUT
RXD
TEST
CNTR
VCO2INH
VSS
RESET
PCVS
PC1OUT
R1
VCO1IN
VDD1
VCO1OUT
VSS1
C1A
C2A
VDD
32K
44.1K
48K
ERR1
ERR2
EMPH
COPY
WCK
LRCK
DATA
BCK
SIG2
PC2OUT
R2
VCO2IN
VDD2
VCO2OUT
VSS2
C2A
C2B
R424 220
R425 220
R426 220
R427 220
R417 1K
R418 2.2K
R419 1K
R420 3.9K
R421 39
R428 1K
R429 3.9K
R430 47
C422 4700P
C423 100/10
C424 100/10
C425 4700P
C417 0.22
L403 33U
C419 4700P
C418 100/10
C420 22P
C421 68P
L404 33U
C426 22P
R446 10K
R447 10K
R448 10K
R452 10K
R453 10K
R454 10K
ALAT
ADATA
ACLK
R449 220
R450 220
R451 220
R455 220
R456 220
R457 220
IC406
PD0026A
(ATT-LEVEL CONTROLLER)
C445 220P
DGIF UNIT
(DWX1307 : KUC)
(DWX1282 : HEM)
(DAC1 SECTION)
CN402 (R)
GND
DATA2
ALAT
ADATA
ACLK
CN401 (Y)
DATA1
CN105 (CDP-2)
CN111 (CDP-2)
TO BRAN UNIT CN111 (CDP-1) (➡P54)
TO CONT UNIT CN105 (CDP-1) (➡P54)
CNCT UNIT (2/2) (DWX1286)
TERMINAL RESISTOR OFF ↔ ON
S501 DSH-106
R502 100 (1/2W)
CN413
CN510
RxD+
RxD−
TxD+
TxD−
GND
232C/X422A
Tx
Rx
F501
F502
F503
F504
VTH1001
JA503
RS422A
GNDF
DKN1051
R503 100 (1/2W)
CONFIG. S502 DSH-106
232C ↔ 422A
TO RSIF UNIT CN302 (➡P83)
CN414
DRST
R505 220
IC501 M751701P
F505–F507 VTH1001
IC501 : LINE DRIVER
Vcc−
Vcc+
GND
C504 2.2/50
C503 2.2/50
C506 0.01
C505 0.01
R512 10K
C507 47P
R501 1K
F505
F506
F507
JA504
RS232C
DKN1052
CN511
+12V
GND
−12V
TO ANLG UNIT CN910 (➡P79)

7.4 DACB UNIT

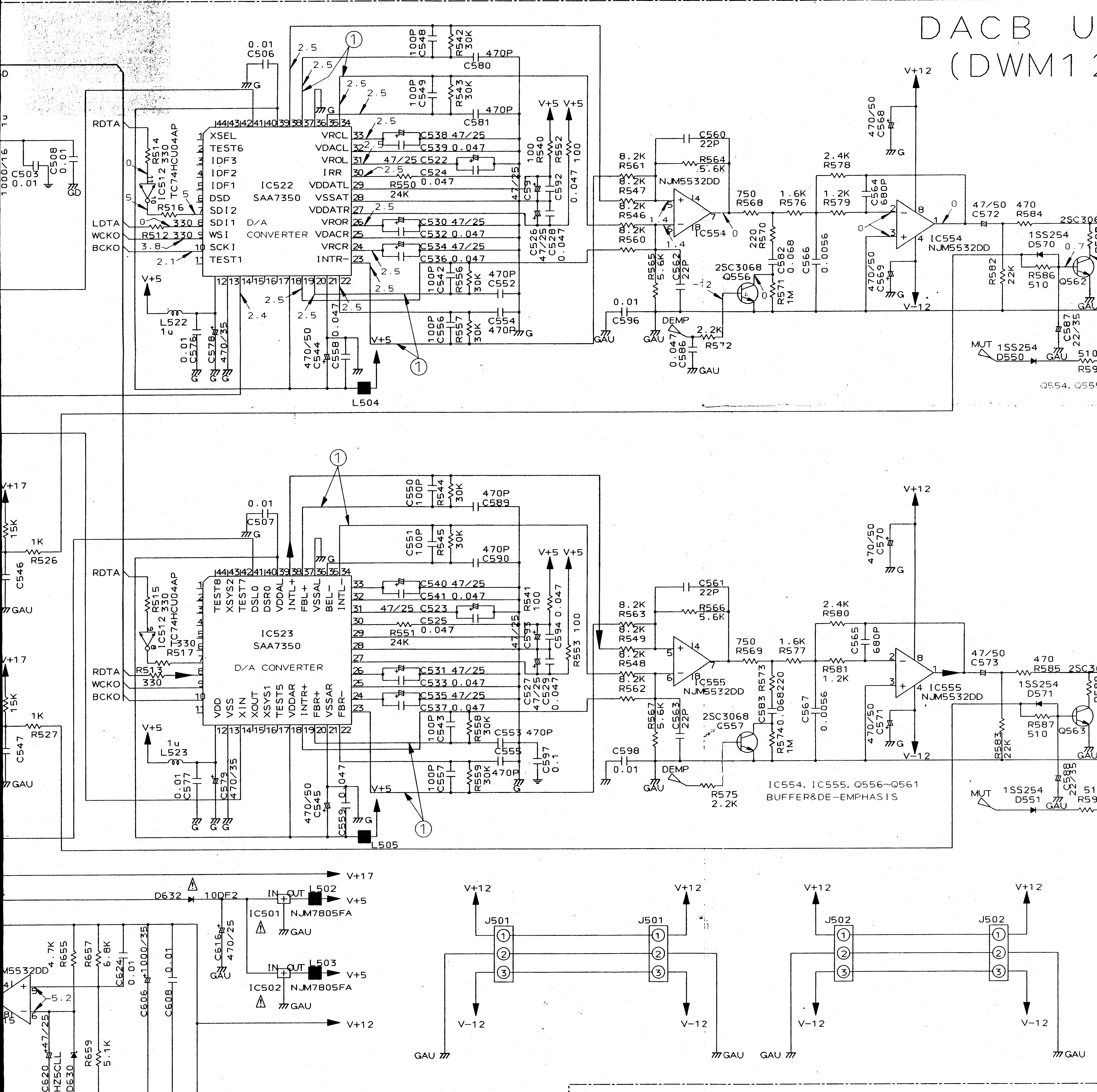

CN501
GND
DATA
BCLK
LRCK
CKO
+5V
TO DGIF UNIT
CN406
(CN404)
(➡P67)
(DIGITAL FILTER)
IC513 SM5813AP
DIN
BCKI
XCKSL
XCKDV
(NC)
XTI
XTO
VSS1
CKO
XSYN
XRST
LRCI
FSCO
BCKO
WCKO
DOL
DOR
VDD
VSS2
DG
XOW18
XOW20
XCOB
R502
330
BCKO
WCKO
LDTA
RDTA
V+5D
L511
1u
C516
1000/16
C503
0.01
C508
0.01
C513
0.01
C514
0.047
C515
0.001
L501
C505
100/25
C512
0.01
C519
1000/16
L512
1u
C511
0.01
C501
0.001
C502
0.001
R501
330
R511
100
R509
330
R510
330
R508
100
IC512
TC74HCU04AP
(INVERTER)
IC522
SAA7350
D/A CONVERTER
XSEL
TEST6
IDF3
IDF2
IDF1
DSD
SDI2
SDI1
WSI
SCKI
TEST1
VRCL
VDACL
VROL
IRR
VDDATL
VSSAT
VDDATR
VROR
VDACR
VRCR
INTR-
C506
0.01
R514
330
R516
R512 330
L522
1u
C576
0.01
C578
470/35
C544
470/50
C558
0.047
L504
Q522, Q524
DIGITAL SILENCE
V+17
R522
15K
R523
15K
R526
1K
DTC124ES
Q524
R520
47K
C546
0.047
GAU
V-12
Q522
DTA124ES
Q523
DTA124ES
C504
0.01
R524
15K
R525
15K
R527
1K
Q525
R521
47K
C547
0.047
Q523, Q525
DIGITAL SILENCE
IC523
SAA7350
D/A CONVERTER
TEST8
XSYS2
TEST7
DSL0
DSR0
VDDAL
INTL+
FBL+
VSSAL
BEL-
INTL-
VDD
VSS
XIN
XOUT
XSYS1
TEST5
VDDAR
INTR+
FBR+
VSSAR
FBR-
C507
0.01
R515
330
R517
330
R513
330
L523
1u
C577
0.01
C579
470/35
C545
470/50
C559
0.047
CN502
TO DGIF UNIT
CN405
(CN405)
(➡P67)
XMUT
DEMP
C510
0.047
R507
100K
D521
1SS254
R504
10K
R505
15K
R506
15K
MUT
DTC124ES
Q521
C520
47/25
C521
0.047
R503
47K
Q521 MUTE
V+17
V+5
V+12
V-12
D632
10DF2
IC501
NJM7805FA
L502
IC502
NJM7805FA
L503
C616
470/25
IC620
ICP-N5
Q624
2SD1133
L601
R651 4.7
Q626
2SC3243
R653
4.7 (1W)
L603
NJM5532DD
IC615
R655
4.7K
R657
6.8K
C624
0.01
C606
1000/35
C608
0.01
R645
1.3K
R647
3K
R649
4.3K
Q623
2SB715
Q622
2SB857
D628
HZ5CLL
Q621
2SB715
C620
47/25
D630
HZ5CLL
R659
5.1K
D620 10DF2
D621 10DF2
D622 10DF2
D623 10DF2
C604 2200/35
C602 47/25
CN604
TO DGIF UNIT
J415
(J416)
(➡P65)
D624 10DF2
D625 10DF2
C605 2200/35
C603 47/25
Q620 2SD755
D629
HZ5CLL
Q619
2SD1133
Q618
2SD755
Q625
2SA1283
R650
4.3K
R648
3K
R654
4.7 (1W)
L604
C621
47/25
D631
HZ5CLL
R660
5.1K
R656
4.7K
R658
6.8K
C625
0.01
C607
1000/35
C609
0.01
J601
CN603
TO DGIF UNIT
J412
(J411)
(➡P65)
C610 0.01
C611 0.01
C612 0.01
C613 0.01
C614 0.01
C615 0.01
D626 10DF2
D627 10DF2
GNDF
R646
1.3K
IC621
ICP-N5
Q617
2SB857
L602
R652 4.7
C572, 5
C544, 5
C587, 5
L501~5
601~6
1
2
3
4
5
A
B
C
D
E
F

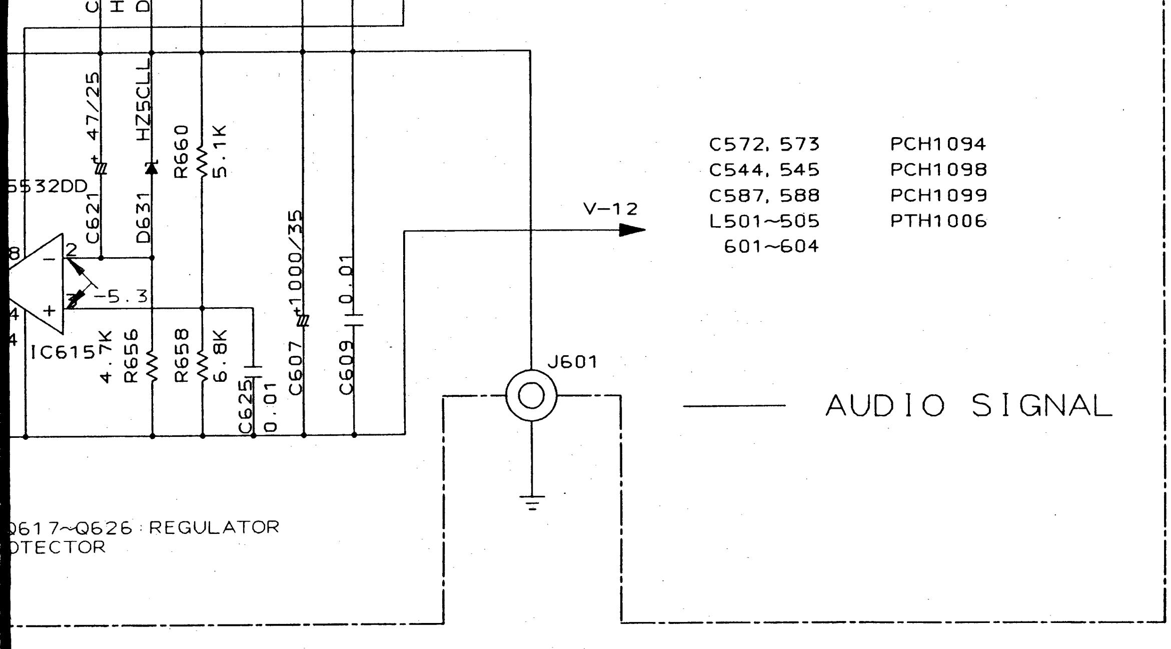
CAUTION: FOR CONTINUED PROTECTION AGAINST RISK OF FIRE. REPLACE WITH SAME TYPE NO. ICP-N5, MFD BY ROHM CO., LTD. FOR IC620.

CAUTION: FOR CONTINUED PROTECTION AGAINST RISK OF FIRE. REPLACE WITH SAME TYPE NO. ICP-N5, MFD BY ROHM CO., LTD. FOR IC621.

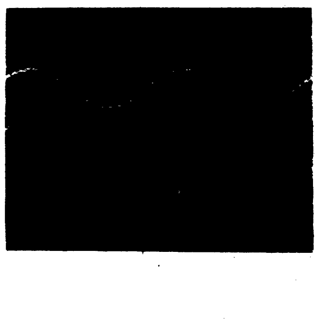
IC501, IC502, IC615, Q617~Q626 : REGULATOR
IC620, IC621 : IC PROTECTOR

DACB U
(DWM12


0.01
C506
2.5
①
100P C548
R542 30K
470P C580
100P C549
R543 30K
470P C581
RDTA
R514 330
IC512 TC74HCU04AP
R516
LDTA
WCKO
BCKO
R512 330
XSEL
TEST6
IDF3
IDF2
IDF1
DSD
SDI2
SDI1
WSI
SCKI
TEST1
IC522
SAA7350
D/A CONVERTER
VRCL
VDACL
VROL
IRR
VDDATL
VSSAT
VDDATR
VROR
VDACR
VRCR
INTR−
C538 47/25
C539 0.047
C522 47/25
C524 0.047
R550 24K
C530 47/25
C532 0.047
C534 47/25
C536 0.047
V+5
R540 100
R552 100
C526 47/25
C528 0.047
C591
C592
L522 1u
C576 0.01
C578 470/35
C544 470/50
C558 0.047
L504
100P C542
R556 30K
470P C552
100P C556
R557 30K
C554 470P
C503 0.01
C508 0.01
1000/16
R561 8.2K
R547 8.2K
R546 8.2K
R560 8.2K
C560 22P
R564 5.6K
NJM5532DD
IC554
R568 750
R576 1.6K
R578 2.4K
R579 1.2K
C564 680P
R570 220
C582 0.068
R571 1M
C566 0.0056
R565 5.6K
C562 22P
2SC3068
Q556
C596 0.01
DEMP
R572 2.2K
C586 0.047
GAU
V+12
C568 470/50
C569 470/50
V−12
IC554 NJM5532DD
C572 47/50
R584 470
1SS254
D570
R582 22K
R586 510
Q562
2SC306
C587 22/35
MUT
1SS254
D550
Q554, Q55
V+17
15K
1K
R526
C546
C550 100P
R544 30K
470P C589
0.01
C507
C551 100P
R545 30K
470P C590
R515 330
IC512 TC74HCU04AP
R517 330
R513 330
TEST8
XSYS2
TEST7
DSLO
DSRO
VDDAL
INTL+
FBL+
VSSAL
BEL−
INTL−
IC523
SAA7350
VDD
VSS
XIN
XOUT
XSYS1
TEST5
VDDAR
INTR+
FBR+
VSSAR
FBR−
C540 47/25
C541 0.047
C523 47/25
C525 0.047
R551 24K
C531 47/25
C533 0.047
C535 47/25
C537 0.047
R541 100
R553 100
C593
C594 0.047
C527 47/25
C529 0.047
100P C543
R558 30K
C553 470P
C555
C597 0.1
100P C557
R559 30K 470P
L523 1u
C577 0.01
C579 470/35
C545 470/50
C559 0.047
L505
R527
C547
C561 22P
R566 5.6K
R563 8.2K
R549 8.2K
R548 8.2K
R562 8.2K
IC555 NJM5532DD
R569 750
R577 1.6K
R580 2.4K
R581 1.2K
C565 680P
R573 820
C583 0.068
R574 1M
C567 0.0056
R567 5.6K
C563 22P
2SC3068 Q557
C598 0.01
R575 2.2K
C570 470/50
C571 470/50
C573 47/50
R585 470
1SS254 D571
R583 22K
R587 510
Q563
C588 22/35
D551
IC554, IC555, Q556~Q561
BUFFER&DE-EMPHASIS
V+17
D632
10DF2
IN OUT
L502
V+5
IC501 NJM7805FA
C616 470/25
L503
IC502 NJM7805FA
V+12
R655 4.7K
R657 6.8K
C624 0.01
C606 1000/35
C608 0.01
NJM5532DD
−5.2
C620 47/25
HZ5CLL D630
R659 5.1K
C621 47/25
HZ5CLL D631
R660 5.1K
−5.3
IC615
R656 4.7K
R658 6.8K
C625 0.01
C607 1000/35
C609 0.01
V−12
J601
AUDIO SIGNAL
Q617~Q626 : REGULATOR
DETECTOR
J501
J502
V+12
V−12
GAU

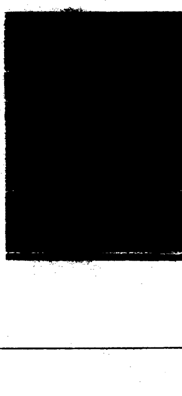


C572, 573	PCH1094
C544, 545	PCH1098
C587, 588	PCH1099
L501~505 601~604	PTH1006

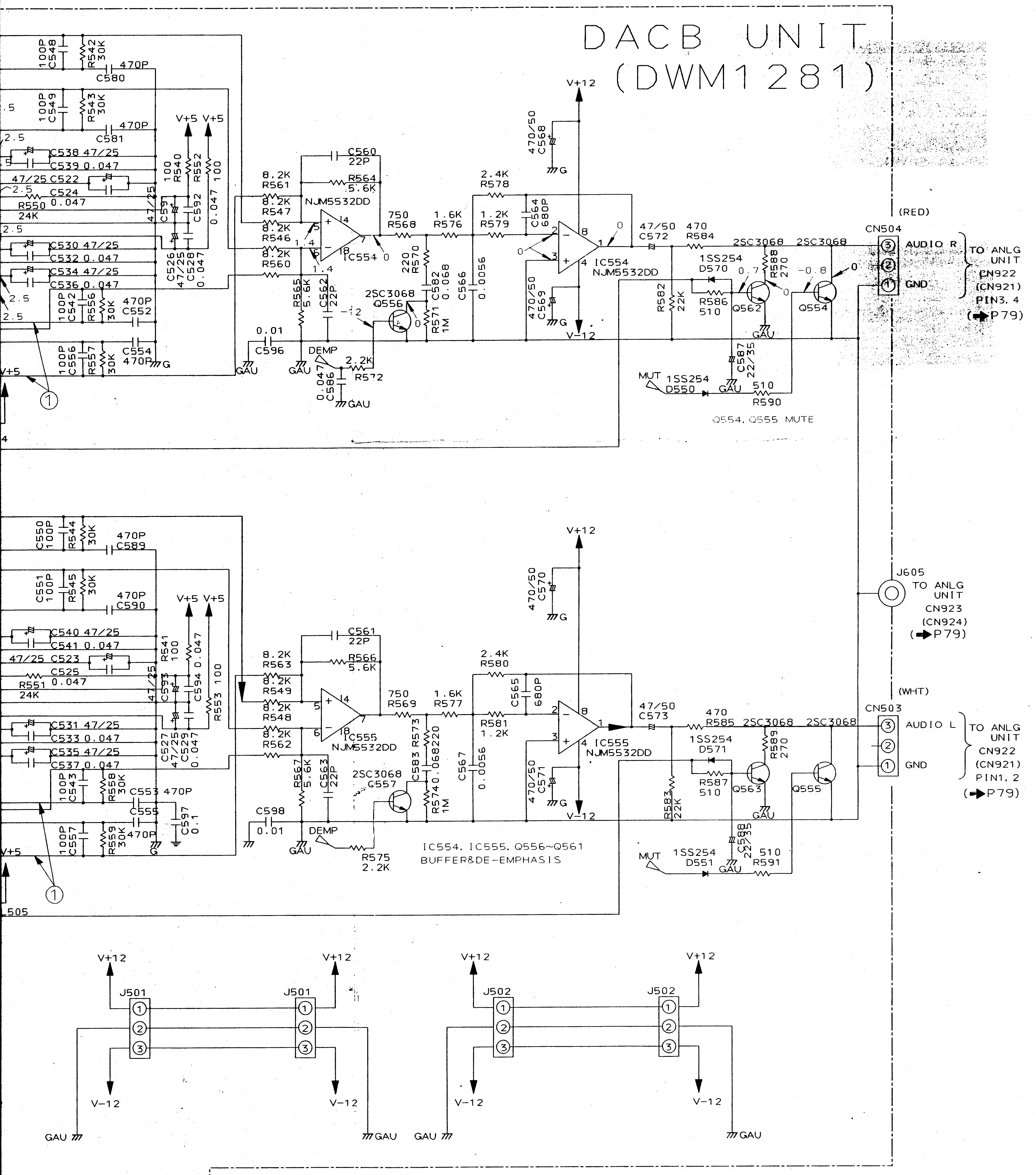


DACB UNIT
IC522, IC523 (SAA7350)
① Play Mode (0dB, 1kHz)
5V/div., 200μsec/div.

① Pin 19, 23, 34, 38

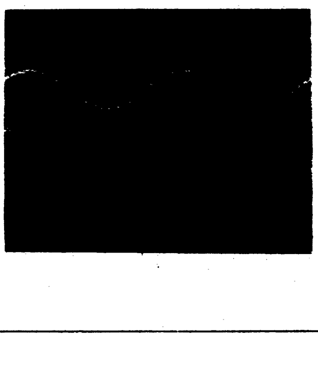


DACB UNIT (DWM1281)


V+12
V-12
V+5
C548 100P
R542 30K
C580 470P
C549 100P
R543 30K
C581 470P
C538 47/25
C539 0.047
C522 47/25
C524 0.047
R550 24K
C530 47/25
C532 0.047
C534 47/25
C536 0.047
C542 100P
R556 30K
C552 470P
C556 100P
R557 30K
C554 470P
R540 100
R552 100
C591 47/25
C592 0.047
C526 47/25
C528 0.047
R561 8.2K
R547 8.2K
R546 8.2K
R560 8.2K
C560 22P
R564 5.6K
NJM5532DD
IC554
R568 750
R576 1.6K
R570 220
R565 5.6K
C562 22P
2SC3068
Q556
C582 0.068
R571 1M
C596 0.01
DEMP
R572 2.2K
C586 0.047
GAU
R578 2.4K
R579 1.2K
C564 680P
C566 0.0056
C568 470/50
C569 470/50
C572 47/50
R584 470
R582 22K
D570 1SS254
R586 510
Q562
R588 270
Q554
C587 22/35
MUT
D550 1SS254
R590 510
Q554, Q555 MUTE
(RED)
CN504
AUDIO R
GND
TO ANLG UNIT CN922 (CN921) PIN3, 4 (➡P79)
J605
TO ANLG UNIT CN923 (CN924) (➡P79)
(WHT)
CN503
AUDIO L
TO ANLG UNIT CN922 (CN921) PIN1, 2 (➡P79)
C550 100P
R544 30K
C589 470P
C551 100P
R545 30K
C590 470P
C540 47/25
C541 0.047
C523 47/25
C525 0.047
R551 24K
C531 47/25
C533 0.047
C535 47/25
C537 0.047
C543 100P
R558 30K
C553 470P
C555
C557 100P
R559 30K
C597 0.1
R541 100
C593 47/25
C594 0.047
R553 100
C527 47/25
C529 0.047
R563 8.2K
R549 8.2K
R548 8.2K
R562 8.2K
C561 22P
R566 5.6K
IC555
R569 750
R577 1.6K
R573
R567 5.6K
C563 22P
Q557
C583 0.068
R574 1M
C598 0.01
R575 2.2K
R580 2.4K
R581 1.2K
C565 680P
C567 0.0056
C570 470/50
C571 470/50
C573 47/50
R585 470
R583 22K
D571 1SS254
R587 510
Q563
R589 270
Q555
C588 22/35
D551 1SS254
R591 510
IC554, IC555, Q556~Q561 BUFFER&DE-EMPHASIS
J501
J502
GAU
①

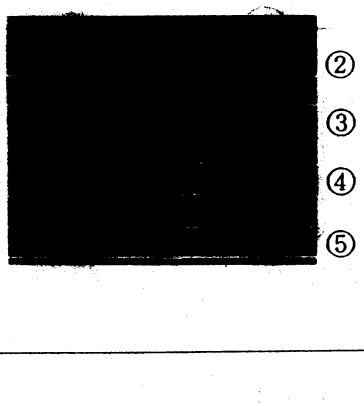
, 573	PCH1094
, 545	PCH1098
, 588	PCH1099
~505	PTH1006
~604	

— AUDIO SIGNAL



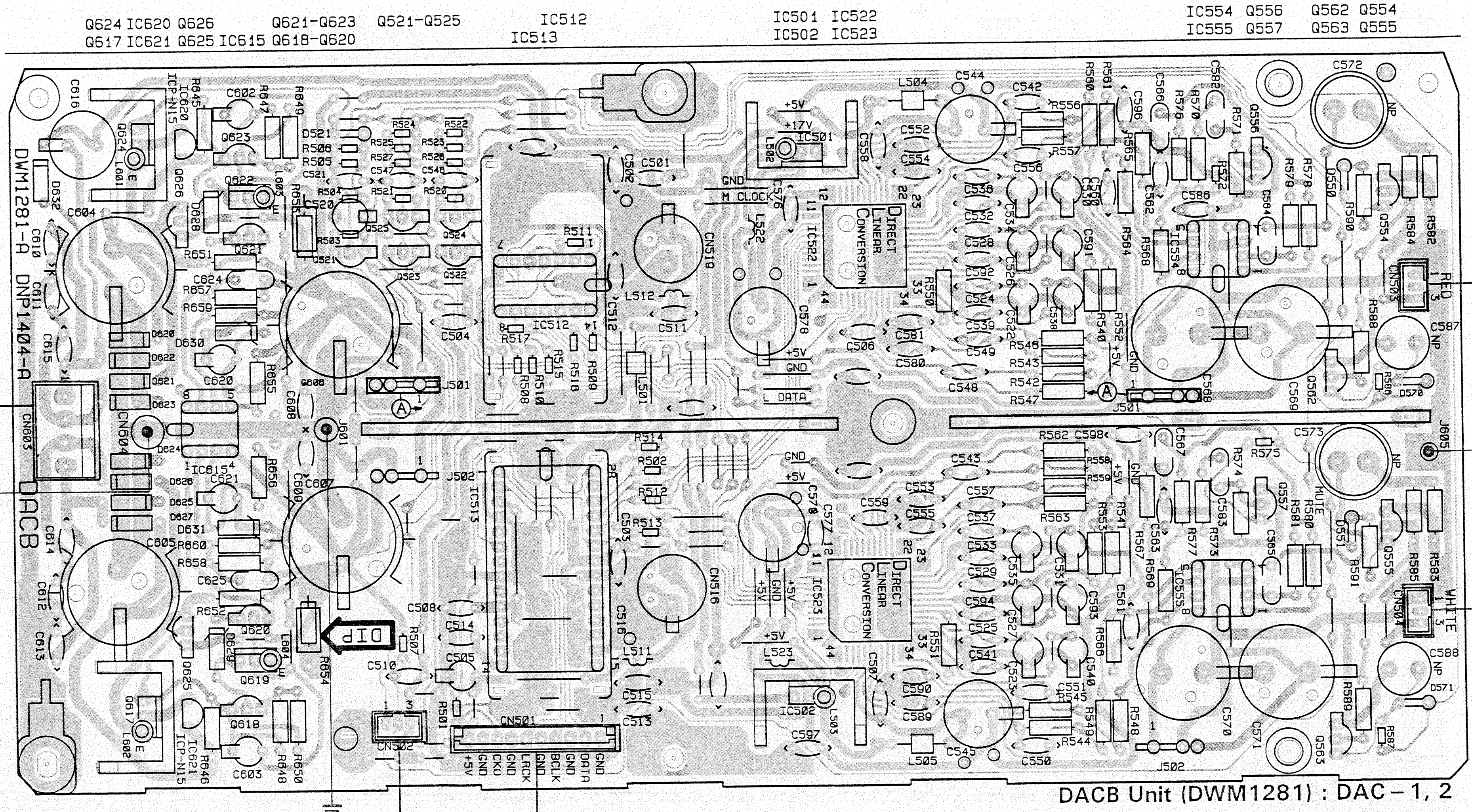
DACB UNIT
IC522, IC523 (SAA7350)
① Play Mode (0dB, 1kHz)
5V/div., 200μsec/div.

① Pin 19, 23, 34, 38



DACB UNIT
IC513 (SM5813AP)
Play Mode
5V/div., 0.5μsec/div.

② BCKO (Pin 26)
③ WCKO (Pin 25)
④ DOL (Pin 24)
⑤ DOR (Pin 23)


Q624 IC620 Q626 Q621-Q623 Q521-Q525 IC512
Q617 IC621 Q625 IC615 Q618-Q620 IC513
IC501 IC522
IC502 IC523
IC554 Q556 Q562 Q554
IC555 Q557 Q563 Q555
DWM1281-A DNP1404-A
DACB
DIRECT LINEAR CONVERSION
IC522
IC523
IC512
IC513
IC501
IC502
CN501
CN502
CN503
CN504
CN603
CN604
J501
J502
J601
J605
RED
WHITE
DIP
MUTE
+5V
+17V
GND
M CLOCK
L DATA
+5V
GND
DATA
BCLK
LRCK
CKO
+5V

DACB Unit (DWM1281) : DAC－1, 2

To DGIF UNIT J411, J412 (➡P64)

To DGIF UNIT J415, J416 (➡P64)

To DGIF UNIT CN403, CN405 (➡P63)

To DGIF UNIT CN404, CN406 (➡P63, 64)

To ANLG UNIT CN921, CN922 Pin1, 2 (➡P77)

To ANLG UNIT CN923, CN924 (➡P77)

To ANLG UNIT CN921, CN922 Pin3, 4 (➡P77)

DACB

IC512

Pin No	Voltage
1	2.6
2	2.7
3	2.6
4	2.4
5	2.6
6	2.4
7-9	
10	5
11	0
12	2.4
13	2.6
14	

IC513

Pin No	Voltage
1	0
2	2.4
3	5
4, 5	
6	2.4
7-9	
10	5
11-13	
14, 15	5
16	
17	5
18-21	
22	5
23, 24	0
25	3.8
26	2.1
27	
28	2.5

IC522

Pin No	Voltage
1-6	
7	5
8	0
9	3.8
10	2.1
11-13	
14	2.4
15-18	
19, 20	2.5
21	
22-24	2.5
25	
26	2.5
27-29	
30, 31	2.5
32	
33-35	2.5
36	
37-40	2.5
41	5
42-44	

IC554

Pin No	Voltage
1-3	0
4	
5, 6	1.4
7	0
8	

IC615

Pin No	Voltage
1	-5.7
2, 3	-5.3
4	-12
5, 6	5.2
7	5.3
8	12

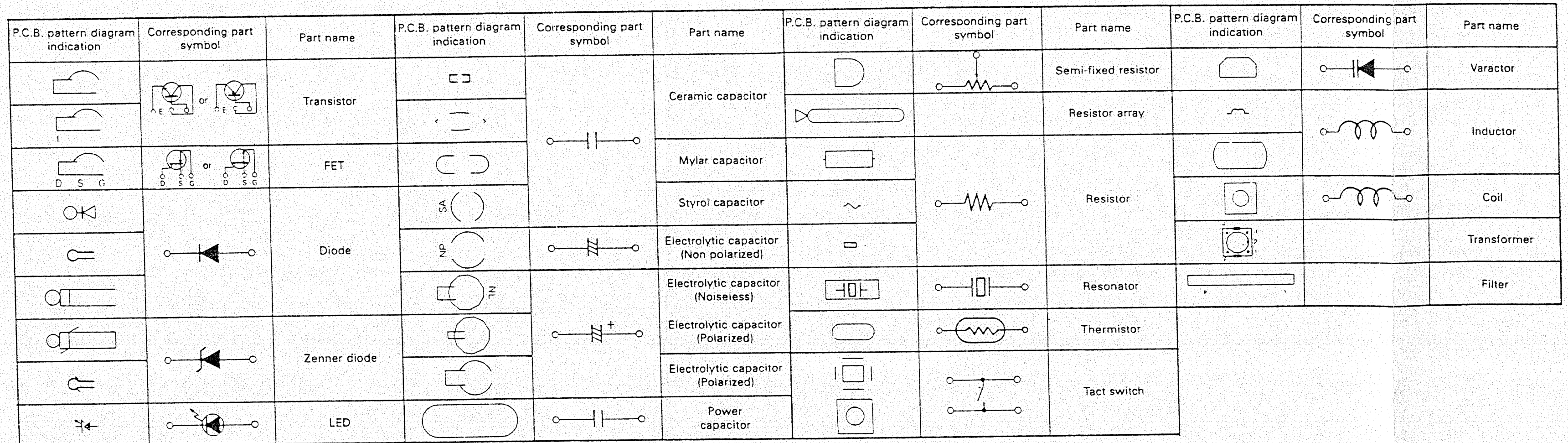
IC620

Pin No	Voltage
1	
3	18

IC621

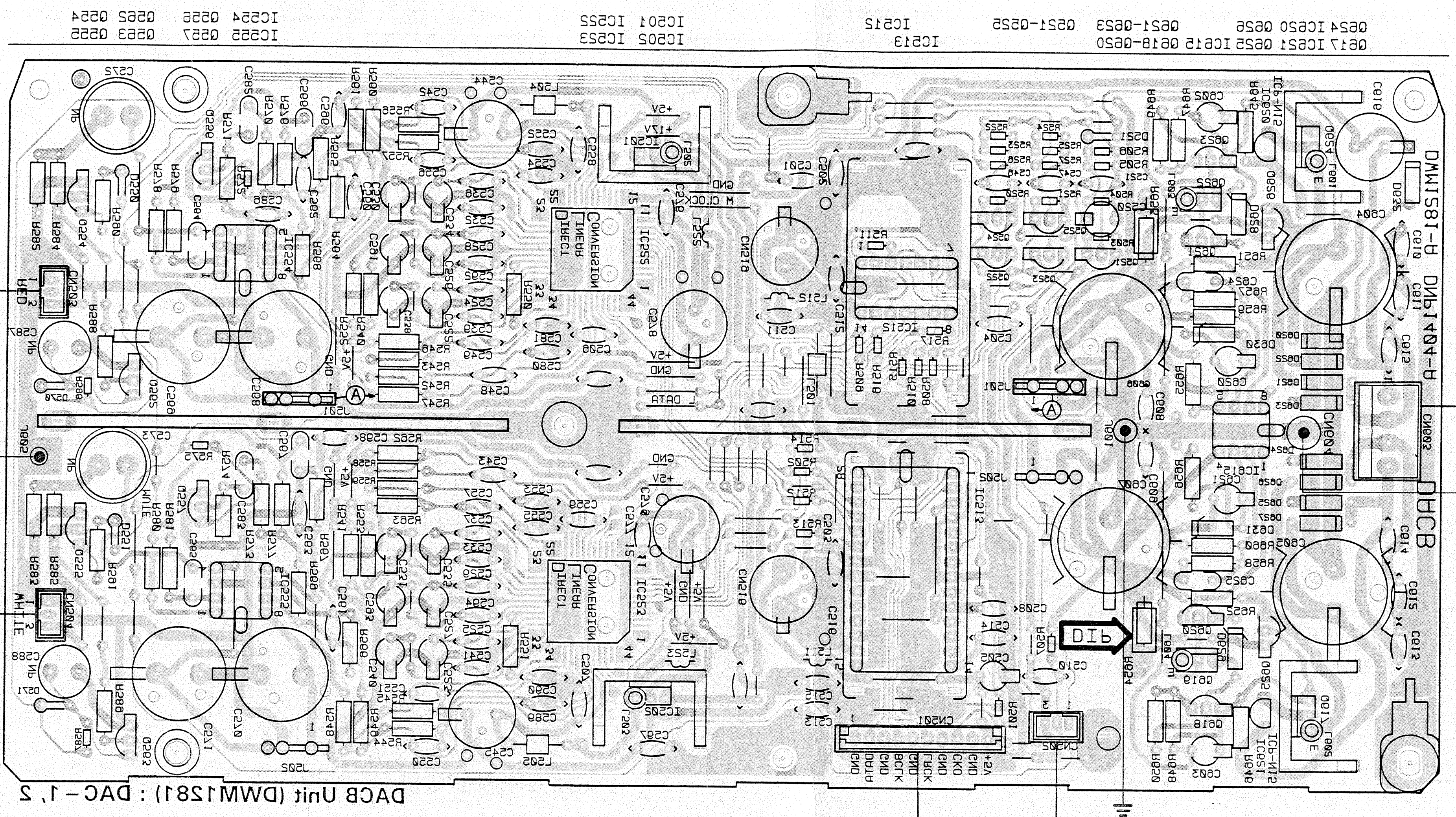
Pin No	Voltage
1	-17.5
3	

	Voltage		
	E	B	C
Q521 Q522		5	-12
Q524		-12	3.6
Q554	0	0.8	0
Q556	0	-12	0
Q562		0.7	0
Q617	-12.7	-13.3	-17.5
Q618	-13.3	-12.6	-11.7
Q619	-12.2	-11.7	
Q620	-6.4	-5.7	
Q621	6	5.3	
Q622	12	11	
Q623	13	12	11
Q624		13	
Q625	-12	-12.7	-13.3
Q626	12	12.4	13


P.C.B. pattern diagram indication
Corresponding part symbol
Part name
Transistor
or
E
FET
D S G
Diode
Zenner diode
LED
Ceramic capacitor
Mylar capacitor
Styrol capacitor
SA
NP
NL
Electrolytic capacitor (Non polarized)
Electrolytic capacitor (Noiseless)
Electrolytic capacitor (Polarized)
Electrolytic capacitor (Polarized)
Power capacitor
Semi-fixed resistor
Resistor array
Resistor
Resonator
Thermistor
Tact switch
Varactor
Inductor
Coil
Transformer
Filter

1. This P.C.B. connection diagram is viewed from the parts mounted side.
2. The parts which have been mounted on the board can be replaced with those shown with the corresponding wiring symbols listed in the above Table.
3. The capacitor terminal marked with ▭ shows negative terminal.
4. The diode marked with ○ shows cathode side.
5. The transistor terminal marked with ▭ shows emitter.

This P. C. B connection diagram is viewed from the parts mounted side.


Q624 IC620 Q626
Q617 IC621 Q625 IC615 Q618-Q620
Q621-Q623
Q521-Q525
IC512
IC513
IC501 IC522
IC502 IC523
IC554 Q556
IC555 Q557
Q562 Q554
Q563 Q555
DWM1281
DACB
DIP
To ANLG UNIT CN921, CN922
Pin1, 2 (➡P77)
To ANLG UNIT CN923, CN924
(➡P77)
To ANLG UNIT CN921, CN922
Pin3, 4 (➡P77)
To DGIF UNIT J411, J412
(➡P64)
To DGIF UNIT J415, J416
(➡P64)
To DGIF UNIT CN404, CN406 (➡P63, 64)
To DGIF UNIT CN403, CN405
(➡P63)

DACB Unit (DWM1281) : DAC-1, 2

DACB

IC512

Pin No	Voltage
1	2.6
2	2.7
3	2.6
4	2.4
5	2.6
6	2.4
7-9	
10	5
11	0
12	2.4
13	2.6
14	

IC513

Pin No	Voltage
1	0
2	2.4
3	5
4.5	
6	2.4
7-9	
10	5
11-13	
14.15	5
16	
17	5
18-21	
22	5
23.24	0
25	3.8
26	2.1
27	
28	2.5

IC522

Pin No	Voltage
1-6	
7	5
8	0
9	3.8
10	2.1
11-13	
14	2.4
15-18	
19.20	2.5
21	
22-24	2.5
25	
26	2.5
27-29	
30.31	2.5
32	
33-35	2.5
36	
37-40	2.5
41	5
42-44	

IC554

Pin No	Voltage
1-3	0
4	
5.6	1.4
7	0
8	

IC615

Pin No	Voltage
1	-5.7
2.3	-5.3
4	-12
5.6	5.2
7	5.3
8	12

IC620

Pin No	Voltage
1	
3	18

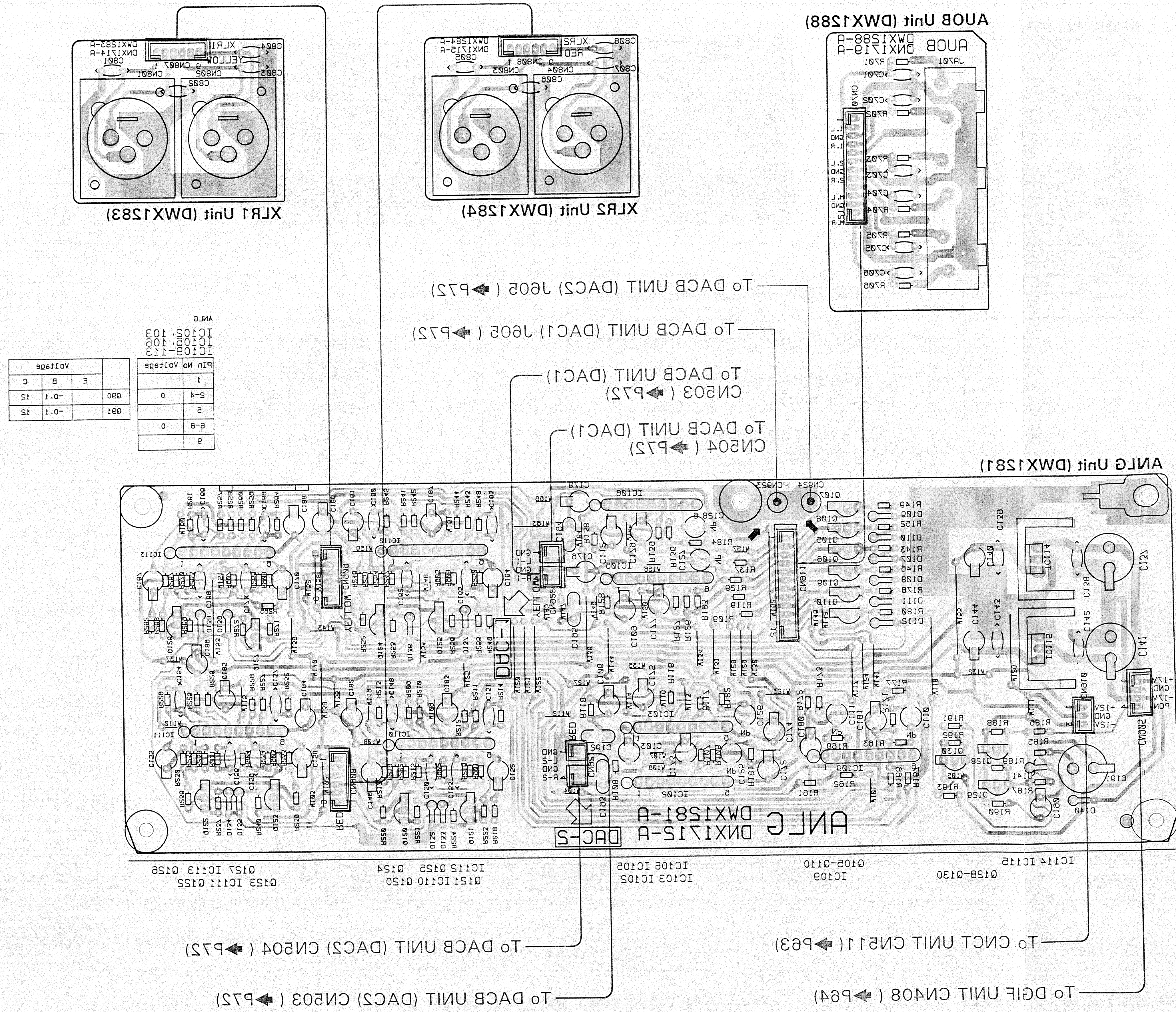
IC621

Pin No	Voltage
1	-17.5
3	

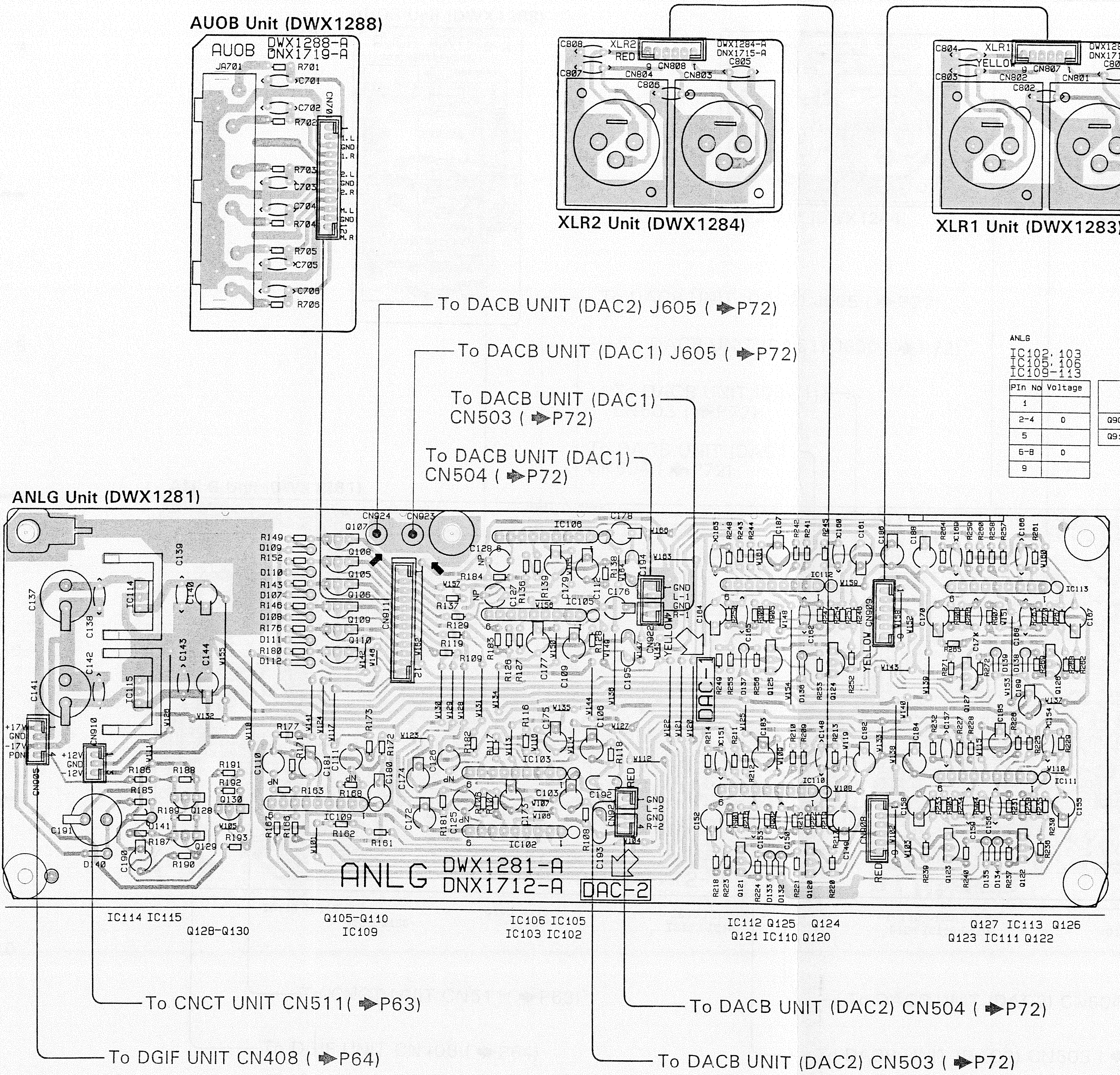
	Voltage		
	E	B	C
Q521 Q522		5	-12
Q524		-12	3.6
Q554	0	0.8	0
Q556	0	-12	0
Q562		0.7	0
Q617	-12.7	-13.3	-17.5
Q618	-13.3	-12.6	-11.7
Q619	-12.2	-11.7	
Q620	-6.4	-5.7	
Q621	6	5.3	
Q622	12	11	
Q623	13	12	11
Q624		13	
Q625	-12	-12.7	-13.3
Q626	12	12.4	13

This P. C. B. connection diagram is viewed from the foil side.

7.5 ANLG UNIT, AUOB UNIT, XLR1 UNIT AND XLR2 UNIT


XLR1 Unit (DWX1283)
XLR2 Unit (DWX1284)
AUOB Unit (DWX1288)
ANLG Unit (DWX1281)
To DACB UNIT (DAC2) J605 (➡P72)
To DACB UNIT (DAC1) J605 (➡P72)
To DACB UNIT (DAC1) CN503 (➡P72)
To DACB UNIT (DAC1) CN504 (➡P72)
DAC-1
DAC-2
ANLG DWX1281-A DNX1712-A
IC114 IC115
Q128–Q130
Q105–Q110
IC109
IC106 IC108 IC105
IC103 IC102
IC112 Q125 Q124
Q121 IC110 Q120
Q127 IC113 Q126
Q123 IC111 Q122
To DACB UNIT (DAC2) CN504 (➡P72)
To DACB UNIT (DAC2) CN503 (➡P72)
To CNCT UNIT CN511 (➡P63)
To DGIF UNIT CN408 (➡P64)

This P. C. B. connection diagram is viewed from the foil side.

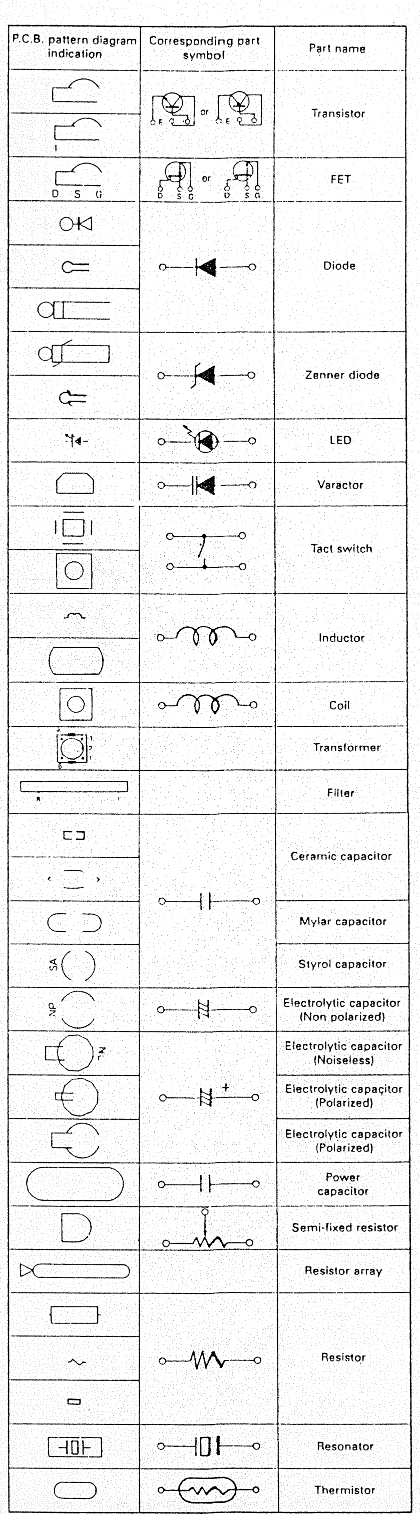

AUOB Unit (DWX1288)
AUOB DWX1288-A DNX1719-A
JA701
CN701
XLR2 Unit (DWX1284)
XLR2 RED
DWX1284-A DNX1715-A
CN808
CN804
CN803
XLR1 Unit (DWX1283)
XLR1 YELLOW
DWX1283-A DNX1714-A
CN807
CN802
CN801
To DACB UNIT (DAC2) J605 (➡P72)
To DACB UNIT (DAC1) J605 (➡P72)
To DACB UNIT (DAC1) CN503 (➡P72)
To DACB UNIT (DAC1) CN504 (➡P72)
ANLG Unit (DWX1281)
ANLG DWX1281-A DNX1712-A
DAC-1
DAC-2
CN924
CN923
CN911
CN909
CN910
CN905
CN908
+17V GND -17V PDN
+12V GND -12V
IC114 IC115
Q128-Q130
Q105-Q110
IC109
IC106 IC105
IC103 IC102
IC112 Q125 Q124
Q121 IC110 Q120
Q127 IC113 Q126
Q123 IC111 Q122
To CNCT UNIT CN511(➡P63)
To DGIF UNIT CN408 (➡P64)
To DACB UNIT (DAC2) CN504 (➡P72)
To DACB UNIT (DAC2) CN503 (➡P72)

ANLG

IC102, 103
IC105, 106
IC109-113

PIn No	Voltage
1	
2-4	0
5	
6-8	0
9	

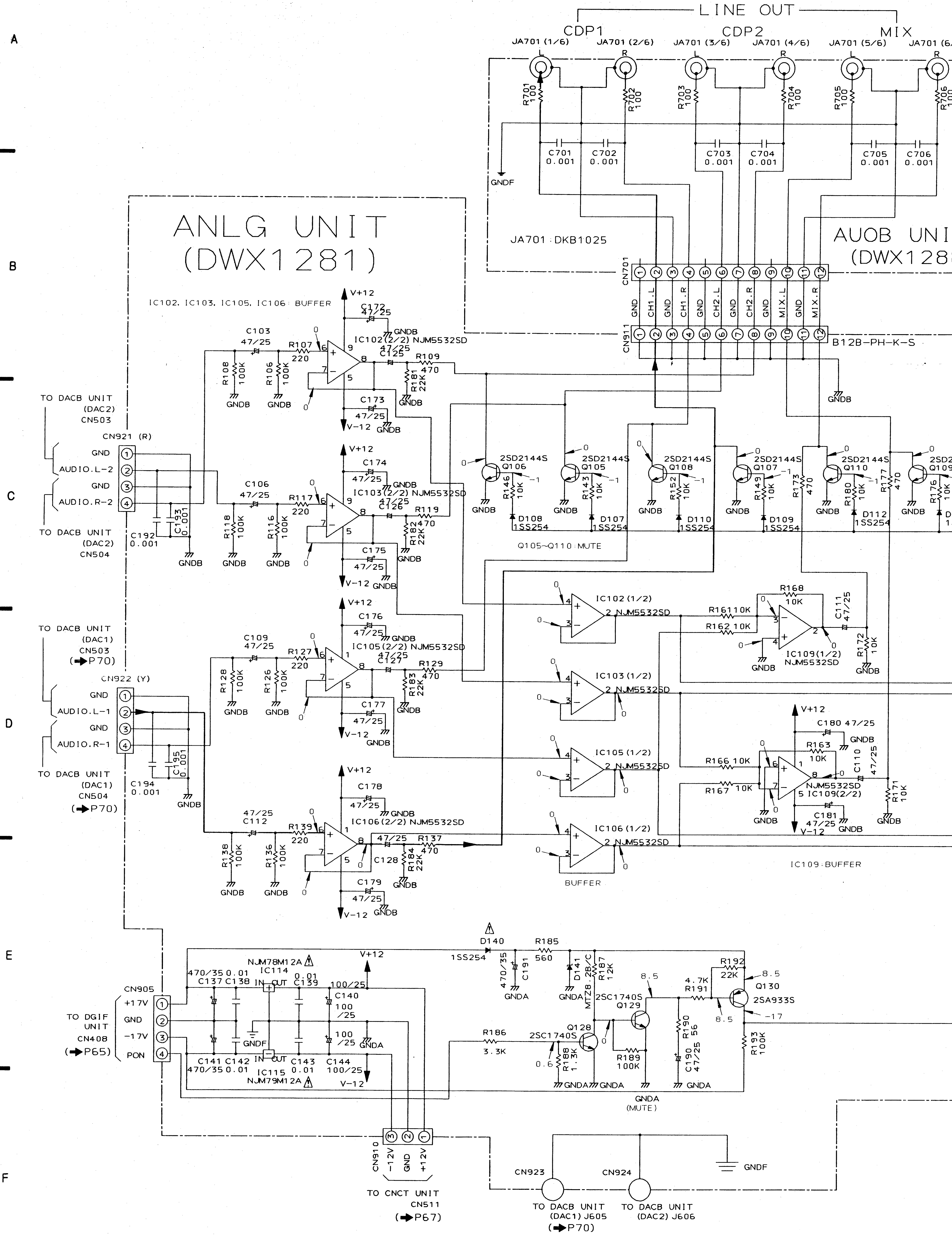
	Voltage		
	E	B	C
Q90		-0.1	12
Q91		-0.1	12



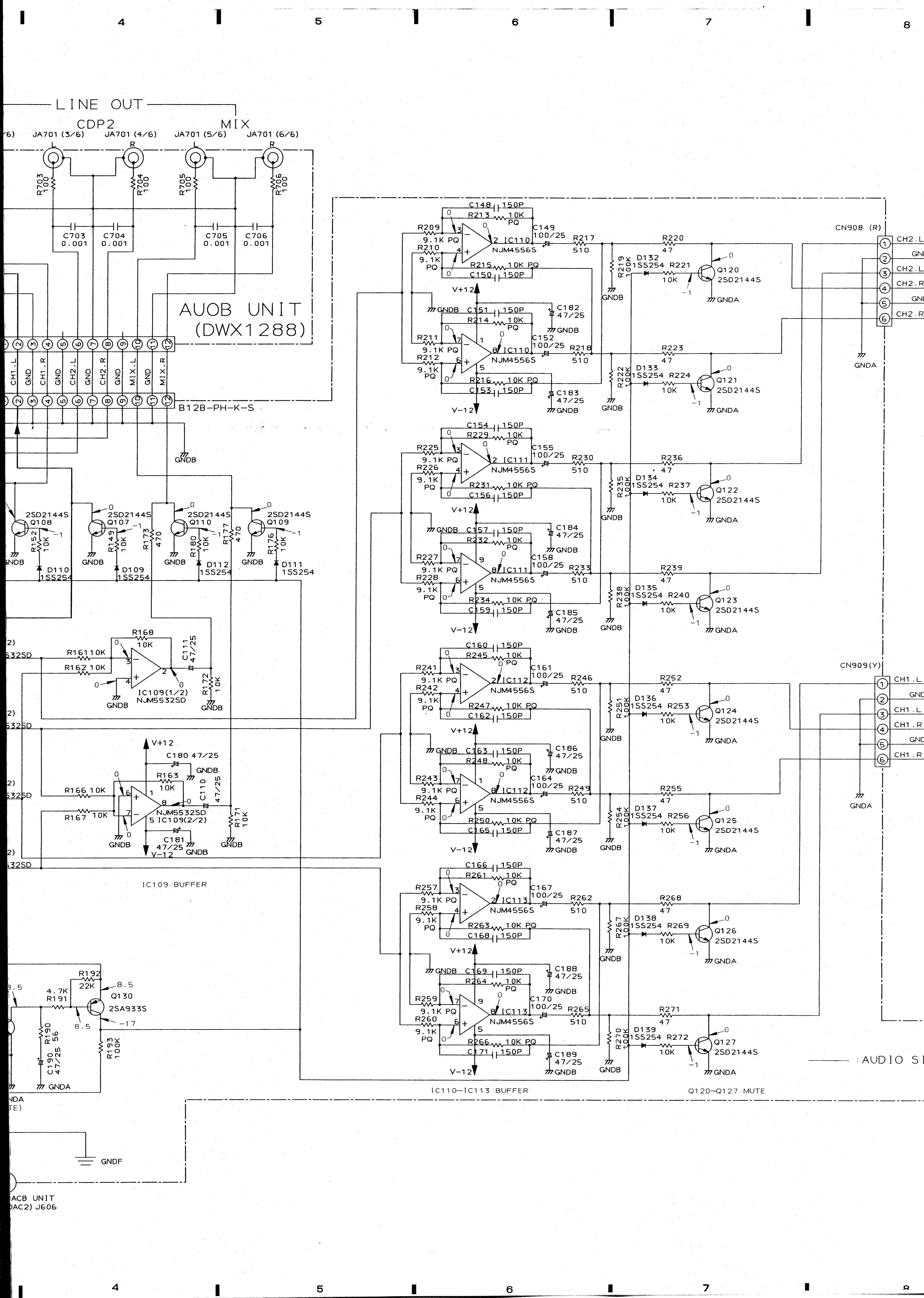
P.C.B. pattern diagram indication	Corresponding part symbol	Part name
		Transistor
D S G		FET
		Diode
		Zenner diode
		LED
		Varactor
		Tact switch
		Inductor
		Coil
		Transformer
		Filter
		Ceramic capacitor
		Mylar capacitor
SA		Styrol capacitor
NP		Electrolytic capacitor (Non polarized)
N.L		Electrolytic capacitor (Noiseless)
		Electrolytic capacitor (Polarized)
		Electrolytic capacitor (Polarized)
		Power capacitor
		Semi-fixed resistor
		Resistor array
		Resistor
		Resonator
		Thermistor

1. This P.C.B. connection diagram is viewed from the parts mounted side.
2. The parts which have been mounted on the board can be replaced with those shown with the corresponding wiring symbols listed in the above Table.
3. The capacitor terminal marked with ▭ shows negative terminal.
4. The diode marked with ○ shows cathode side.
5. The transistor terminal marked with ▭ shows emitter.

This P. C. B connection diagram is viewed from the parts mounted side.



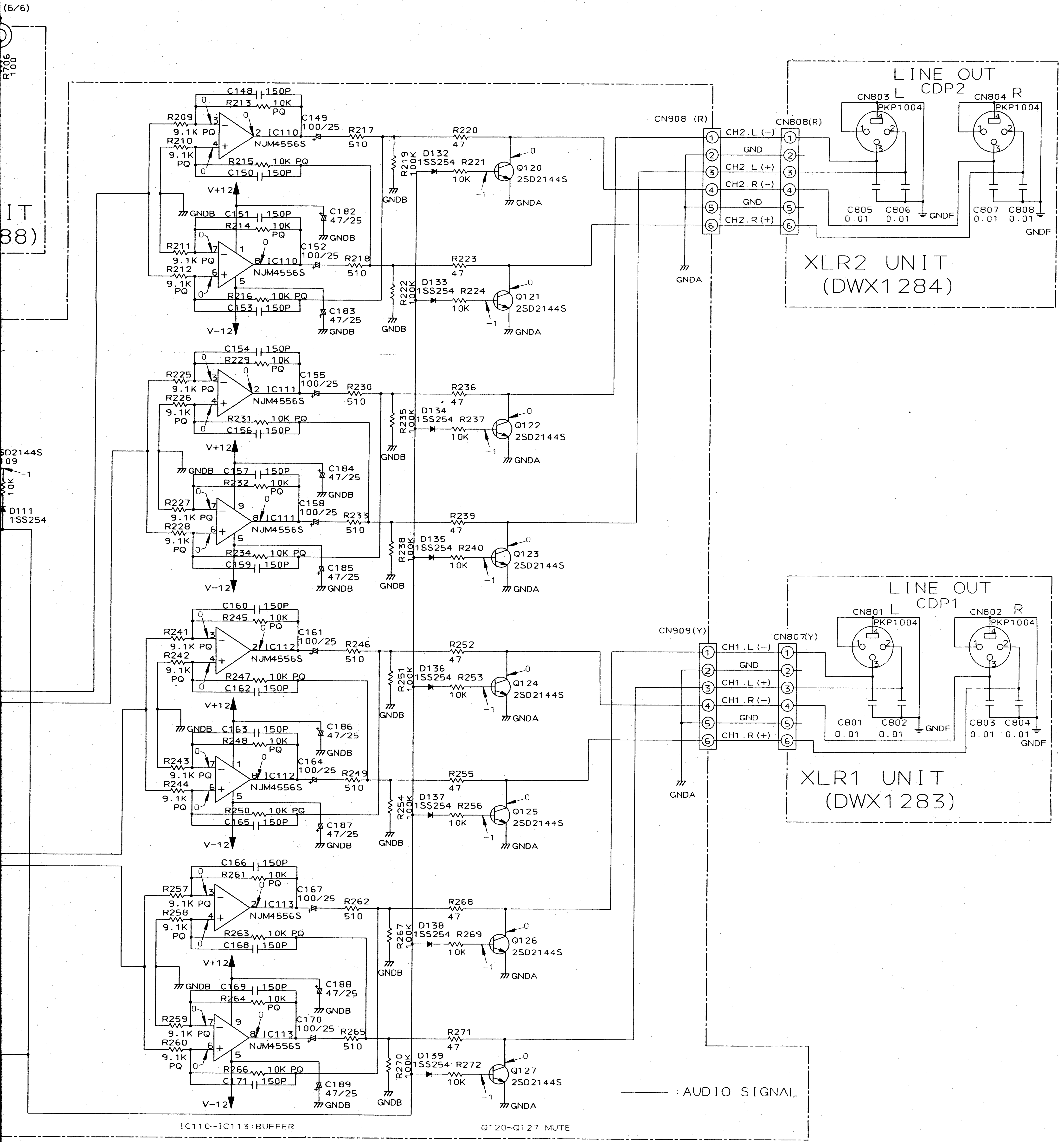
LINE OUT
CDP1
CDP2
MIX
JA701 (1/6)
JA701 (2/6)
JA701 (3/6)
JA701 (4/6)
JA701 (5/6)
L
R
R701 100
R702 100
R703 100
R704 100
R705 100
C701 0.001
C702 0.001
C703 0.001
C704 0.001
C705 0.001
C706 0.001
GNDF
JA701 : DKB1025
AUOB UNI
(DWX128
CN701
GND
CH1.L
CH1.R
CH2.L
CH2.R
MIX.L
MIX.R
CN911
B12B-PH-K-S
ANLG UNIT
(DWX1281)
IC102, IC103, IC105, IC106 : BUFFER
V+12
V-12
C172 47/25
GNDB
C103 47/25
R107 220
IC102(2/2) NJM5532SD
C125 47/25
R109 470
R108 100K
R106 100K
R181 22K
C173 47/25
TO DACB UNIT
(DAC2)
CN503
CN921 (R)
AUDIO.L-2
AUDIO.R-2
C192 0.001
C193 0.001
CN504
C174 47/25
C106 47/25
R117 220
IC103(2/2) NJM5532SD
C126 47/25
R119 470
R118 100K
R116 100K
R182 22K
C175 47/25
2SD2144S
Q106
Q105
Q108
Q107
Q110
Q109
R146 10K
R143 10K
R152 10K
R149 10K
R173 470
R180 10K
R177 470
R176 10K
D108 1SS254
D107 1SS254
D110 1SS254
D109 1SS254
D112 1SS254
Q105~Q110 : MUTE
(DAC1)
(➡P70)
CN922 (Y)
AUDIO.L-1
AUDIO.R-1
C194 0.001
C195 0.001
C176 47/25
C109 47/25
R127 220
IC105(2/2) NJM5532SD
C127 47/25
R129 470
R128 100K
R126 100K
R183 22K
C177 47/25
C178 47/25
C112 47/25
R139 220
IC106(2/2) NJM5532SD
R137 470
R138 100K
R136 100K
C128 47/25
R184 22K
C179 47/25
IC102 (1/2)
IC103 (1/2)
IC105 (1/2)
IC106 (1/2)
NJM5532SD
BUFFER
R168 10K
R161 10K
R162 10K
C111 47/25
IC109(1/2)
NJM5532SD
R172 10K
C180 47/25
R163 10K
R166 10K
R167 10K
C110 47/25
NJM5532SD
IC109(2/2)
R171 10K
C181 47/25
IC109 : BUFFER
D140
1SS254
R185 560
C191 470/35
D141 MTZ8.2B/C
R187 12K
R192 22K
8.5
Q130
2SA933S
4.7K R191
-17
GNDA
2SC1740S
Q129
Q128
R190 56
R193 100K
R186 3.3K
R188 1.3K
0.6
R189 100K
C190 47/25
GNDA (MUTE)
CN905
TO DGIF UNIT
CN408
(➡P65)
+17V
GND
-17V
PON
NJM78M12A
IC114
IN OUT
C137 470/35
C138 0.01
C139 0.01
C140 100/25
GNDF
C141 470/35
C142 0.01
IC115 NJM79M12A
C143 0.01
C144 100/25
CN910
-12V
GND
+12V
TO CNCT UNIT
CN511
(➡P67)
CN923
CN924
TO DACB UNIT (DAC1) J605
(➡P70)
TO DACB UNIT (DAC2) J606
1
2
3
4
A
B
C
D
E
F


4
5
6
7
8
LINE OUT
CDP2
MIX
JA701 (3/6)
JA701 (4/6)
JA701 (5/6)
JA701 (6/6)
L
R
R703 100
R704 100
R705 100
R706 100
C703 0.001
C704 0.001
C705 0.001
C706 0.001
AUOB UNIT
(DWX1288)
CH1.L
GND
CH1.R
GND
CH2.L
GND
CH2.R
GND
MIX.L
GND
MIX.R
B12B-PH-K-S
GNDB
2SD2144S
Q108
Q107
Q110
Q109
R152 10K
R149 10K
R173 470
R180 10K
R177 470
R176 10K
D110 1SS254
D109 1SS254
D112 1SS254
D111 1SS254
R168 10K
R161 10K
R162 10K
C111 47/25
R172 10K
IC109(1/2)
NJM5532SD
V+12
C180 47/25
R163 10K
C110 47/25
R166 10K
R167 10K
NJM5532SD
IC109(2/2)
R171 10K
C181 47/25
V-12
R192 22K
8.5
4.7K
R191
Q130
2SA933S
-17
R190 56
R193 100K
C190 47/25
GNDA
GNDF
ACB UNIT
J606
C148 150P
R213 10K PQ
R209 9.1K PQ
R210 9.1K PQ
C149 100/25
IC110
NJM4556S
R217 510
R215 10K PQ
C150 150P
C151 150P
R214 10K PQ
C182 47/25
R211 9.1K PQ
R212 9.1K PQ
C152 100/25
R218 510
R216 10K PQ
C153 150P
C183 47/25
R219 100K
D132 1SS254
R220 47
R221 10K
Q120 2SD2144S
R222 100K
D133 1SS254
R223 47
R224 10K
Q121 2SD2144S
C154 150P
R229 10K PQ
R225 9.1K PQ
R226 9.1K PQ
C155 100/25
IC111
R230 510
R231 10K PQ
C156 150P
C157 150P
R232 10K PQ
C184 47/25
R227 9.1K PQ
R228 9.1K PQ
C158 100/25
R233 510
R234 10K PQ
C159 150P
C185 47/25
R235 100K
D134 1SS254
R236 47
R237 10K
Q122 2SD2144S
R238 100K
D135 1SS254
R239 47
R240 10K
Q123 2SD2144S
C160 150P
R245 10K PQ
R241 9.1K PQ
R242 9.1K PQ
C161 100/25
IC112
R246 510
R247 10K PQ
C162 150P
C163 150P
R248 10K PQ
C186 47/25
R243 9.1K PQ
R244 9.1K PQ
C164 100/25
R249 510
R250 10K PQ
C165 150P
C187 47/25
R251 100K
D136 1SS254
R252 47
R253 10K
Q124 2SD2144S
R254 100K
D137 1SS254
R255 47
R256 10K
Q125 2SD2144S
C166 150P
R261 10K PQ
R257 9.1K PQ
R258 9.1K PQ
C167 100/25
IC113
R262 510
R263 10K PQ
C168 150P
C169 150P
R264 10K PQ
C188 47/25
R259 9.1K PQ
R260 9.1K PQ
C170 100/25
R265 510
R266 10K PQ
C171 150P
C189 47/25
R267 100K
D138 1SS254
R268 47
R269 10K
Q126 2SD2144S
R270 100K
D139 1SS254
R271 47
R272 10K
Q127 2SD2144S
CN908 (R)
CH2.L
CH2.R
CN909(Y)
CH1.L
CH1.R
AUDIO S

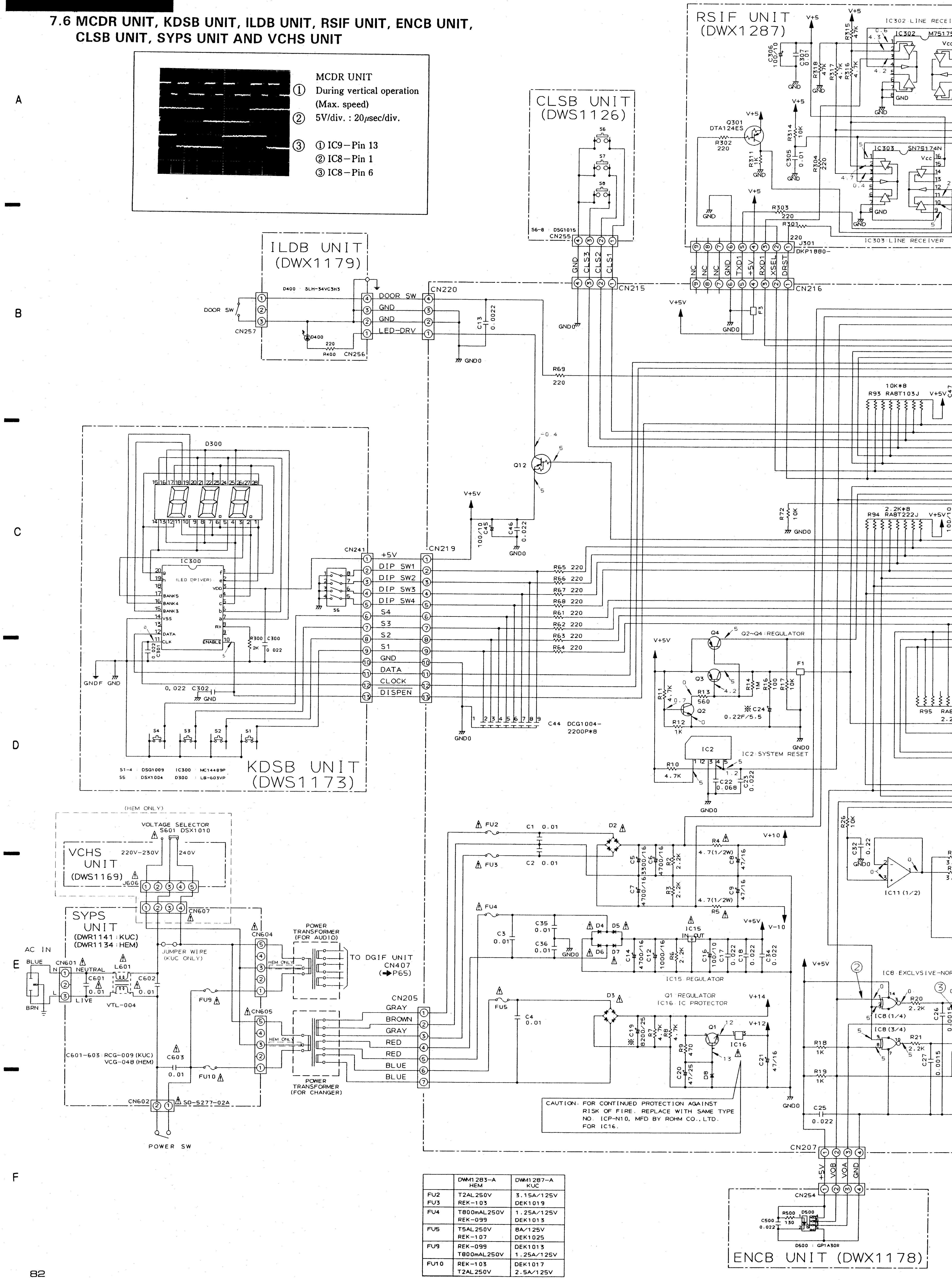
IC109 BUFFER

IC110~IC113 BUFFER

Q120~Q127 MUTE


(6/6)
R706 100
IT
88)
C148 150P
R213 10K PQ
R209 9.1K PQ
R210 9.1K PQ
IC110 NJM4556S
C149 100/25
R217 510
R220 47
R219 100K
D132 1SS254
R221 10K
Q120 2SD2144S
R215 10K PQ
C150 150P
V+12
GNDB
C151 150P
C182 47/25
R214 10K PQ
R211 9.1K PQ
R212 9.1K PQ
C152 100/25
R218 510
R223 47
R222 100K
D133 1SS254
R224 10K
Q121 2SD2144S
R216 10K PQ
C153 150P
C183 47/25
V-12
GNDA
C154 150P
R229 10K PQ
R225 9.1K PQ
R226 9.1K PQ
IC111 NJM4556S
C155 100/25
R230 510
R236 47
R235 100K
D134 1SS254
R237 10K
Q122 2SD2144S
R231 10K PQ
C156 150P
C157 150P
C184 47/25
R232 10K PQ
R227 9.1K PQ
R228 9.1K PQ
C158 100/25
R233 510
R239 47
R238 100K
D135 1SS254
R240 10K
Q123 2SD2144S
R234 10K PQ
C159 150P
C185 47/25
2SD2144S
109
10K
D111 1SS254
C160 150P
R245 10K PQ
R241 9.1K PQ
R242 9.1K PQ
IC112 NJM4556S
C161 100/25
R246 510
R252 47
R251 100K
D136 1SS254
R253 10K
Q124 2SD2144S
R247 10K PQ
C162 150P
C163 150P
C186 47/25
R248 10K PQ
R243 9.1K PQ
R244 9.1K PQ
C164 100/25
R249 510
R255 47
R254 100K
D137 1SS254
R256 10K
Q125 2SD2144S
R250 10K PQ
C165 150P
C187 47/25
C166 150P
R261 10K PQ
R257 9.1K PQ
R258 9.1K PQ
IC113 NJM4556S
C167 100/25
R262 510
R268 47
R267 100K
D138 1SS254
R269 10K
Q126 2SD2144S
R263 10K PQ
C168 150P
C169 150P
C188 47/25
R264 10K PQ
R259 9.1K PQ
R260 9.1K PQ
C170 100/25
R265 510
R271 47
R270 100K
D139 1SS254
R272 10K
Q127 2SD2144S
R266 10K PQ
C171 150P
C189 47/25
IC110~IC113:BUFFER
Q120~Q127:MUTE
:AUDIO SIGNAL
CN908 (R)
CN808(R)
CH2.L(-)
GND
CH2.L(+)
CH2.R(-)
GND
CH2.R(+)
LINE OUT
CDP2
CN803 L
CN804 R
PKP1004
C805 0.01
C806 0.01
C807 0.01
C808 0.01
GNDF
XLR2 UNIT
(DWX1284)
CN909(Y)
CN807(Y)
CH1.L(-)
GND
CH1.L(+)
CH1.R(-)
GND
CH1.R(+)
LINE OUT
CDP1
CN801 L
CN802 R
PKP1004
C801 0.01
C802 0.01
C803 0.01
C804 0.01
GNDF
XLR1 UNIT
(DWX1283)
GNDA

7.6 MCDR UNIT, KDSB UNIT, ILDB UNIT, RSIF UNIT, ENCB UNIT, CLSB UNIT, SYPS UNIT AND VCHS UNIT

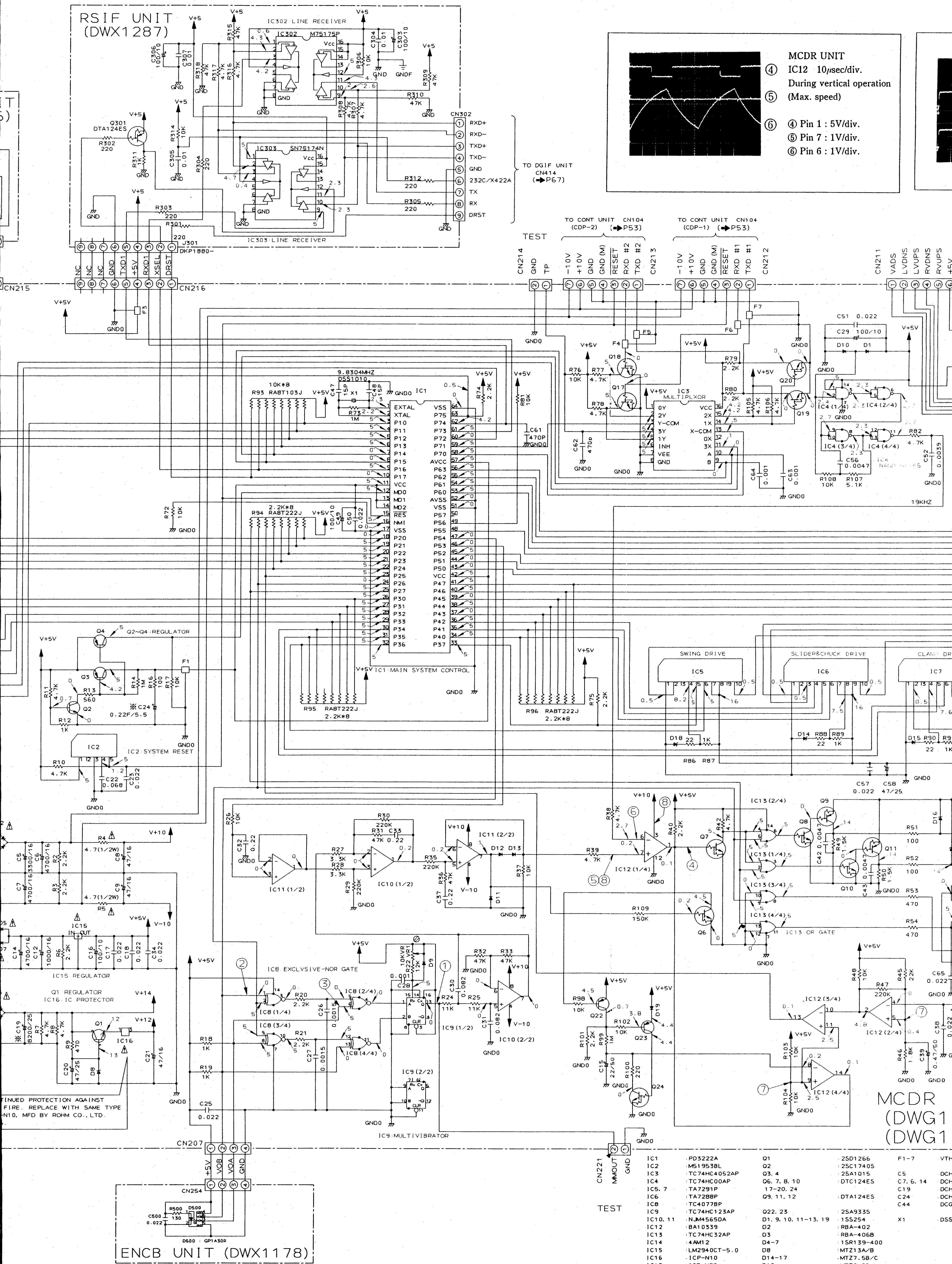

1
2
3
4
5
A
B
C
D
E
F
RSIF UNIT (DWX1287)
IC302 LINE RECEI
IC302 M7519
IC303 SN75174N
IC303 LINE RECEIVER
Q301 DTA124ES
R302 220
R311 1K
R314 10K
R304 220
R303 220
R301 220
R315 47K
R318 47K
R317 4.7K
R316 4.7K
C306 100/10
C307 0.01
C305 0.01
V+5
GND
J301 DKP1880-
CN216
NC
NC
NC
GND
TXD1
+5V
RXD1
XSEL
DRST
F3
GND0
CLSB UNIT (DWS1126)
S6
S7
S8
S6-8 DSG1015
CN255
CN215
GND
CLS3
CLS2
CLS1
ILDB UNIT (DWX1179)
D400 SLH-34VC3H3
DOOR SW
CN257
CN256
CN220
DOOR SW
GND
LED-DRV
D400
R400 220
C13 0.0022
GND0
R69 220
KDSB UNIT (DWS1173)
D300
IC300 (LED DRIVER)
BANK5
BANK4
BANK3
VSS
VDD
DATA
CLK
ENABLE
RX
C301 0.022
R300 2K
C300 0.022
C302 0.022
GNDF
GND
S5
S4
S3
S2
S1
S1-4 DSG1009
S5 DSX1004
IC300 MC14489P
D300 LB-603VP
CN241
CN219
+5V
DIP SW1
DIP SW2
DIP SW3
DIP SW4
S4
S3
S2
S1
GND
DATA
CLOCK
DISPEN
R65 220
R66 220
R67 220
R68 220
R61 220
R62 220
R63 220
R64 220
C44 DCG1004-2200P*8
Q12
V+5V
C45 100/10
C46 0.022
10K*8
R93 RA8T103J
2.2K*8
R94 RA8T222J
R95 RA8
R72 10K
Q4
Q2~Q4 : REGULATOR
Q3
Q2
R11 4.7K
R13 560
R12 1K
R14 1M
R16 100
R17 10K
C24 0.22F/5.5
F1
IC2
IC2 : SYSTEM RESET
R10 4.7K
C22 0.068
C23 0.022
(HEM ONLY)
VOLTAGE SELECTOR
S601 DSX1010
VCHS UNIT (DWS1169)
220V-230V
240V
J606
CN607
SYPS UNIT (DWR1141 : KUC) (DWR1134 : HEM)
AC IN
BLUE
BRN
CN601
NEUTRAL
LIVE
C601 0.01
L601
C602 0.01
VTL-004
JUMPER WIRE (KUC ONLY)
CN604
CN605
HEM ONLY
POWER TRANSFORMER (FOR AUDIO)
POWER TRANSFORMER (FOR CHANGER)
TO DGIF UNIT CN407 (➡P65)
FU9
FU10
C601-603 RCG-009 (KUC) VCG-048 (HEM)
C603 0.01
CN602
SD-5277-02A
POWER SW
CN205
GRAY
BROWN
GRAY
RED
RED
BLUE
BLUE
FU2
FU3
FU4
FU5
C1 0.01
C2 0.01
D2
C5 3300/16
C6 4700/16
R2 2.2K
C7 4700/16
C12 3300/16
R3 2.2K
R4 4.7(1/2W)
R5 4.7(1/2W)
C8 47/16
C9 47/16
V+10
C3 0.01
C35 0.01
C36 0.01
D4
D5
D6
D7
IC15
IN
OUT
C14 4700/16
C10 1000/16
R6 2.2K
C16 100/10
C17 0.022
C18 0.022
C34 0.022
V+5V
V-10
IC15 REGULATOR
C4 0.01
D3
Q1 REGULATOR
IC16 IC PROTECTOR
V+14
V+12
C19 8200/25
R7 4.7K
R8 4.7K
R9 470
Q1
IC16
C20 47/25
D8
C21 47/16
R26 10K
C32 0.22
IC11 (1/2)
IC8 EXCLUSIVE-NOR
IC8 (1/4)
IC8 (3/4)
R20 2.2K
R21 2.2K
R18 1K
R19 1K
C26 0.0015
C27 0.0015
C25 0.022
CN207
+5V
VOB
VOA
GND
CN254
R500 130
D500
C500 0.022
D500 : GP1A30R
ENCB UNIT (DWX1178)

MCDR UNIT
① During vertical operation
(Max. speed)
② 5V/div. : 20μsec/div.

③ ① IC9–Pin 13
② IC8–Pin 1
③ IC8–Pin 6

CAUTION. FOR CONTINUED PROTECTION AGAINST RISK OF FIRE. REPLACE WITH SAME TYPE NO. ICP-N10, MFD BY ROHM CO., LTD. FOR IC16.

	DWM1283-A HEM	DWM1287-A KUC
FU2 FU3	T2AL250V REK-103	3.15A/125V DEK1019
FU4	T800mAL250V REK-099	1.25A/125V DEK1013
FU5	T5AL250V REK-107	8A/125V DEK1025
FU9	REK-099 T800mAL250V	DEK1013 1.25A/125V
FU10	REK-103 T2AL250V	DEK1017 2.5A/125V

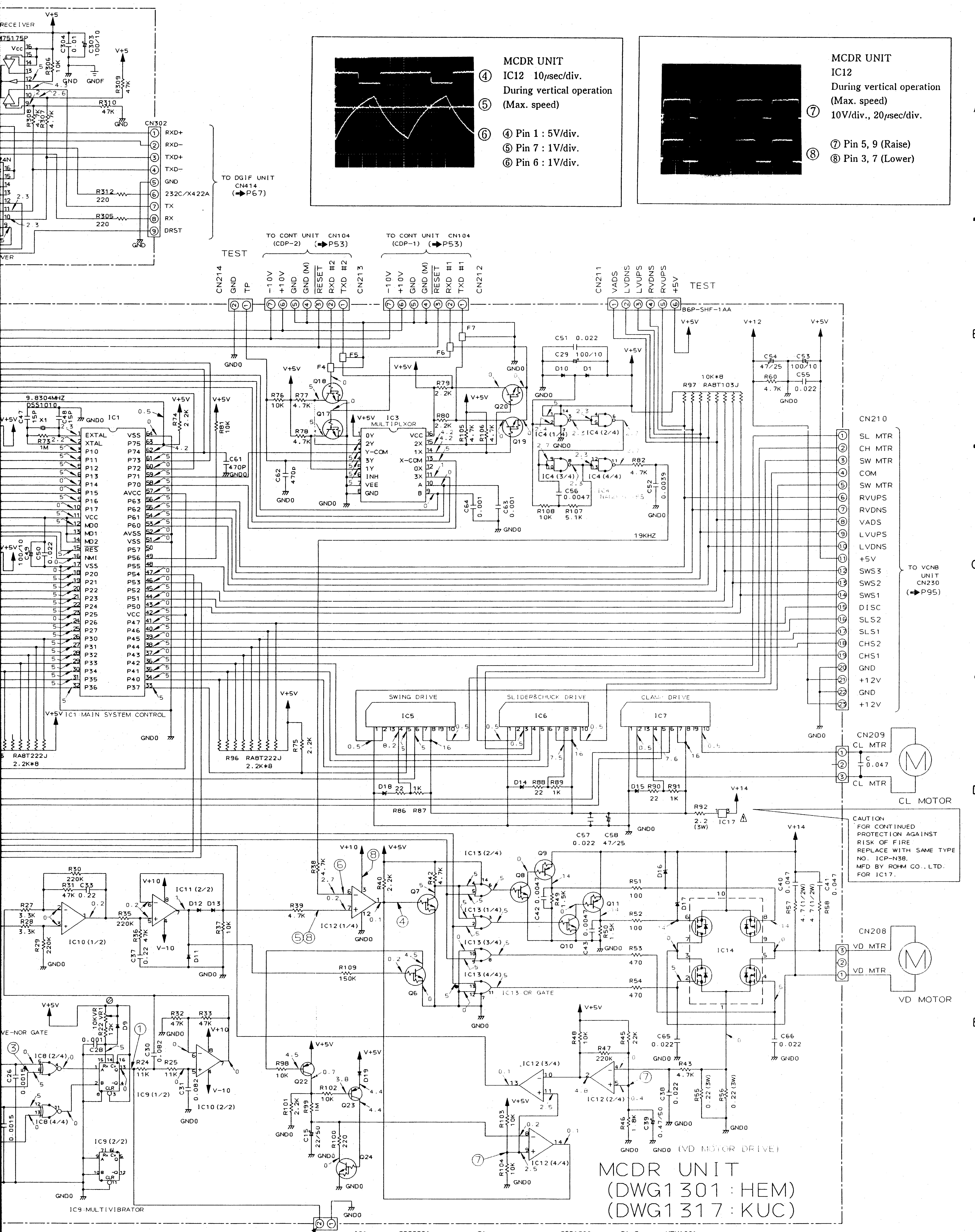

RSIF UNIT (DWX1287)
IC302 LINE RECEIVER
IC302 M75175P
IC303 SN75174N
IC303 LINE RECEIVER
Q301 DTA124ES
CN302
RXD+
RXD−
TXD+
TXD−
GND
232C/X422A
TX
RX
DRST
TO DGIF UNIT CN414 (➡P67)
J301 DKP1880−
CN215
CN216
NC NC NC GND TXD1 +5V RXD1 XSEL DRST
TEST
CN214 GND TP
TO CONT UNIT CN104 (CDP-2) (➡P53)
TO CONT UNIT CN104 (CDP-1) (➡P53)
CN213 −10V +10V GND GND (M) RESET RXD #2 TXD #2
CN212 −10V +10V GND GND (M) RESET RXD #1 TXD #1
CN211 VADS LVDNS LVUPS RVDNS RVUPS +5V
IC3 MULTIPLXOR
IC1 MAIN SYSTEM CONTROL
9.8304MHZ DSS1010
10K*8 R93 RAB T103J
2.2K*8 R94 RAB T222J
R95 RAB T222J 2.2K*8
R96 RAB T222J 2.2K*8
IC4 NAND GATES
19KHZ
Q2~Q4 REGULATOR
IC2 SYSTEM RESET
SWING DRIVE IC5
SLIDER&CHUCK DRIVE IC6
CLAMP DR IC7
IC13 OR GATE
IC8 EXCLVSIVE-NOR GATE
IC9 MULTIVIBRATOR
IC15 REGULATOR
Q1 REGULATOR
IC16 IC PROTECTOR
CN207 +5V VOB VOA GND
CN254
ENCB UNIT (DWX1178)
D500 : GP1A30R
CN221 MMOUT GND
TEST
MCDR (DWG1 (DWG1

MCDR UNIT
④ IC12 10μsec/div.
During vertical operation
⑤ (Max. speed)

⑥ ④ Pin 1 : 5V/div.
⑤ Pin 7 : 1V/div.
⑥ Pin 6 : 1V/div.

TINUED PROTECTION AGAINST
FIRE. REPLACE WITH SAME TYPE
-N10, MFD BY ROHM CO., LTD.

IC1	PD3222A	Q1	2SD1266	F1−7	VTH
IC2	M51953BL	Q2	2SC1740S		
IC3	TC74HC4052AP	Q3, 4	2SA1015	C5	DCH
IC4	TC74HC00AP	Q6, 7, 8, 10	DTC124ES	C7, 6, 14	DCH
IC5, 7	TA7291P	17−20, 24		C19	DCH
IC6	TA7288P	Q9, 11, 12	DTA124ES	C24	DCH
IC8	TC4077BP			C44	DCG
IC9	TC74HC123AP	Q22, 23	2SA933S		
IC10, 11	NJM4565DA	D1, 9, 10, 11−13, 19	1SS254	X1	DSS
IC12	BA10339	D2	RBA−402		
IC13	TC74HC32AP	D3	RBA−406B		
IC14	4AM12	D4−7	1SR139−400		
IC15	LM2940CT−5.0	D8	MTZ13A/B		
IC16	ICP−N10	D14−17	MTZ7.5B/C		
IC17	ICP−N38	D18	MTZ8.2B		


5
6
7
8
9
A
B
C
D
E
F
RECEIVER
M75175P
V+5
C304 0.01
C303 100/10
R306 10K
R309 47K
R310 47K
GND
GNDF
R308 4.7K
R307 4.7K
CN302
① RXD+
② RXD−
③ TXD+
④ TXD−
⑤ GND
⑥ 232C/X422A
⑦ TX
⑧ RX
⑨ DRST
R312 220
R305 220
TO DGIF UNIT CN414 (➡P67)
TO CONT UNIT CN104 (CDP-2) (➡P53)
TO CONT UNIT CN104 (CDP-1) (➡P53)
TEST
CN214
GND
TP
−10V
+10V
GND
GND (M)
RESET
RXD #2
TXD #2
CN213
RXD #1
TXD #1
CN212
CN211
VADS
LVDNS
LVUPS
RVDNS
RVUPS
+5V
B6P-SHF-1AA
F1
F2
F3
F4
F5
F6
F7
GND0
9.8304MHZ
DSS1010
X1
C47 15P
C48 15P
R73 1M
IC1
EXTAL
XTAL
P10
P11
P12
P13
P14
P15
P16
P17
VCC
MD0
MD1
MD2
RES
NMI
VSS
P20
P21
P22
P23
P24
P25
P26
P27
P30
P31
P32
P33
P34
P35
P36
VSS
P75
P74
P73
P72
P71
P70
AVCC
P63
P62
P61
P60
AVSS
VSS
P57
P56
P55
P54
P53
P52
P51
P50
VCC
P47
P46
P45
P44
P43
P42
P41
P40
P37
IC1 MAIN SYSTEM CONTROL
R74 2.2K
R81 10K
C61 470P
C50 0.022
C49 100/10
RABT222J 2.2K*8
R96 RABT222J 2.2K*8
R75 2.2K
R76 10K
R77 4.7K
R78 4.7K
Q17
Q18
IC3 MULTIPLXOR
0Y
2Y
Y-COM
3Y
1Y
INH
VEE
GND
VCC
2X
1X
X-COM
0X
3X
A
B
C62 470P
R79 2.2K
R80 2.2K
R105 4.7K
R106 4.7K
Q19
Q20
C64 0.001
C63 0.001
C51 0.022
C29 100/10
D10
D1
IC4 (1/4)
IC4 (2/4)
IC4 (3/4)
IC4 (4/4)
R82 4.7K
C56 0.0047
C52 0.0059
R108 10K
R107 5.1K
19KHZ
V+12
10K*8
R97 RABT103J
C54 47/25
C53 100/10
R60 4.7K
C55 0.022
CN210
① SL MTR
② CH MTR
③ SW MTR
④ COM
⑤ SW MTR
⑥ RVUPS
⑦ RVDNS
⑧ VADS
⑨ LVUPS
⑩ LVDNS
⑪ +5V
⑫ SWS3
⑬ SWS2
⑭ SWS1
⑮ DISC
⑯ SLS2
⑰ SLS1
⑱ CHS2
⑲ CHS1
⑳ GND
㉑ +12V
㉒ GND
㉓ +12V
TO VCN8 UNIT CN230 (➡P95)
SWING DRIVE
IC5
SLIDER&CHUCK DRIVE
IC6
CLAMP DRIVE
IC7
D18
R86
R87
D14
R88 22
R89 1K
D15
R90 22
R91 1K
V+14
R92 2.2 (3W)
IC17
C57 0.022
C58 47/25
CN209
CL MTR
C 0.047
CL MOTOR
CAUTION
FOR CONTINUED PROTECTION AGAINST RISK OF FIRE REPLACE WITH SAME TYPE NO. ICP-N38, MFD BY ROHM CO., LTD. FOR IC17.
R30 220K
R31 47K
C33 0.22
R27 3.3K
R28 3.3K
R29 220K
IC10 (1/2)
R35 220K
R36 47K
C37 0.22
V+10
V−10
IC11 (2/2)
D12
D13
D11
R37 10K
R38 4.7K
R39 4.7K
R40 2.2K
R42 4.7K
IC12 (1/4)
Q7
Q6
R109 150K
IC13 (2/4)
IC13 (1/4)
IC13 (3/4)
IC13 (4/4)
IC13 OR GATE
Q8
Q9
Q10
Q11
C42 0.0047
R49 1.5K
C43 0.0047
R50 1.5K
R51 100
R52 100
R53 470
R54 470
D16
D17
IC14
C40 0.047
R57 4.7 (1/2W)
R58 4.7 (1/2W)
C41 0.047
CN208
VD MTR
VD MOTOR
C65 0.022
C66 0.022
R48 10K
R45 22K
R47 220K
R43 4.7K
IC12 (3/4)
IC12 (2/4)
C38 0.022
R55 0.22 (3W)
R56 0.22 (3W)
R46 1.8K
C39 0.47/50
R103 10K
R104 10K
IC12 (4/4)
(VD MOTOR DRIVE)
VE-NOR GATE
IC8 (2/4)
IC8 (4/4)
C26 0.0015
0.0015
VR1 10KVR
R22 12K
D9
C28 0.001
R24 11K
C30 0.082
R25 11K
C31 0.082
R32 47K
R33 47K
IC10 (2/2)
IC9 (1/2)
IC9 (2/2)
IC9 MULTIVIBRATOR
R98 10K
Q22
R101 2.2K
R99 1M
R102 10K
Q23
D19
C15 22/50
R100 220
Q24
CN221
MMOUT
GND
TEST

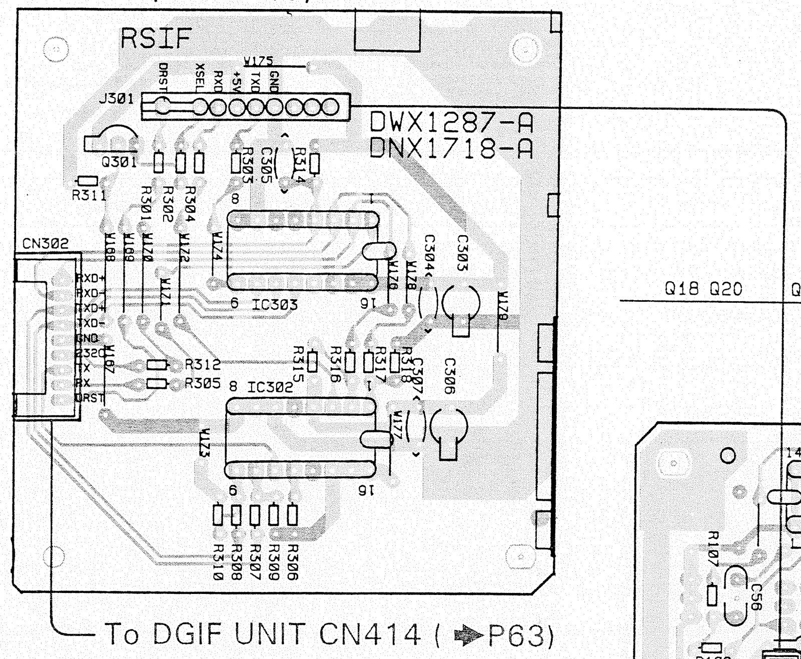
MCDR UNIT
④ IC12 10μsec/div.
During vertical operation
⑤ (Max. speed)
⑥
④ Pin 1 : 5V/div.
⑤ Pin 7 : 1V/div.
⑥ Pin 6 : 1V/div.

MCDR UNIT
IC12
During vertical operation
⑦ (Max. speed)
10V/div., 20μsec/div.
⑧
⑦ Pin 5, 9 (Raise)
⑧ Pin 3, 7 (Lower)

MCDR UNIT
(DWG1301 : HEM)
(DWG1317 : KUC)

IC1	PD3222A	Q1	2SD1266	F1−7	VTH1001
IC2	M51953BL	Q2	2SC1740S		
IC3	TC74HC4052AP	Q3, 4	2SA1015	C5	DCH1023
IC4	TC74HC00AP	Q6, 7, 8, 10	DTC124ES	C7, 6, 14	DCH1024
IC5, 7	TA7291P	17−20, 24		C19	DCH1035
IC6	TA7288P	Q9, 11, 12	DTA124ES	C24	DCH1037
IC8	TC4077BP			C44	DCG1004
IC9	TC74HC123AP	Q22, 23	2SA933S		
IC10, 11	NJM4565DA	D1, 9, 10, 11−13, 19	1SS254	X1	DSS1010
IC12	BA10339	D2	RBA-402		
IC13	TC74HC32AP	D3	RBA-406B		
IC14	4AM12	D4−7	1SR139-400		
IC15	LM2940CT-5.0	D8	MTZ13A/B		
IC16	ICP-N10	D14−17	MTZ7.5B/C		
IC17	ICP-N38	D18	MTZ8.2B		

RSIF Unit (DWX1287)


RSIF
DWX1287-A
DNX1718-A
J301
Q301
R311
CN302
IC303
IC302
To DGIF UNIT CN414 (➔P63)

RSIF

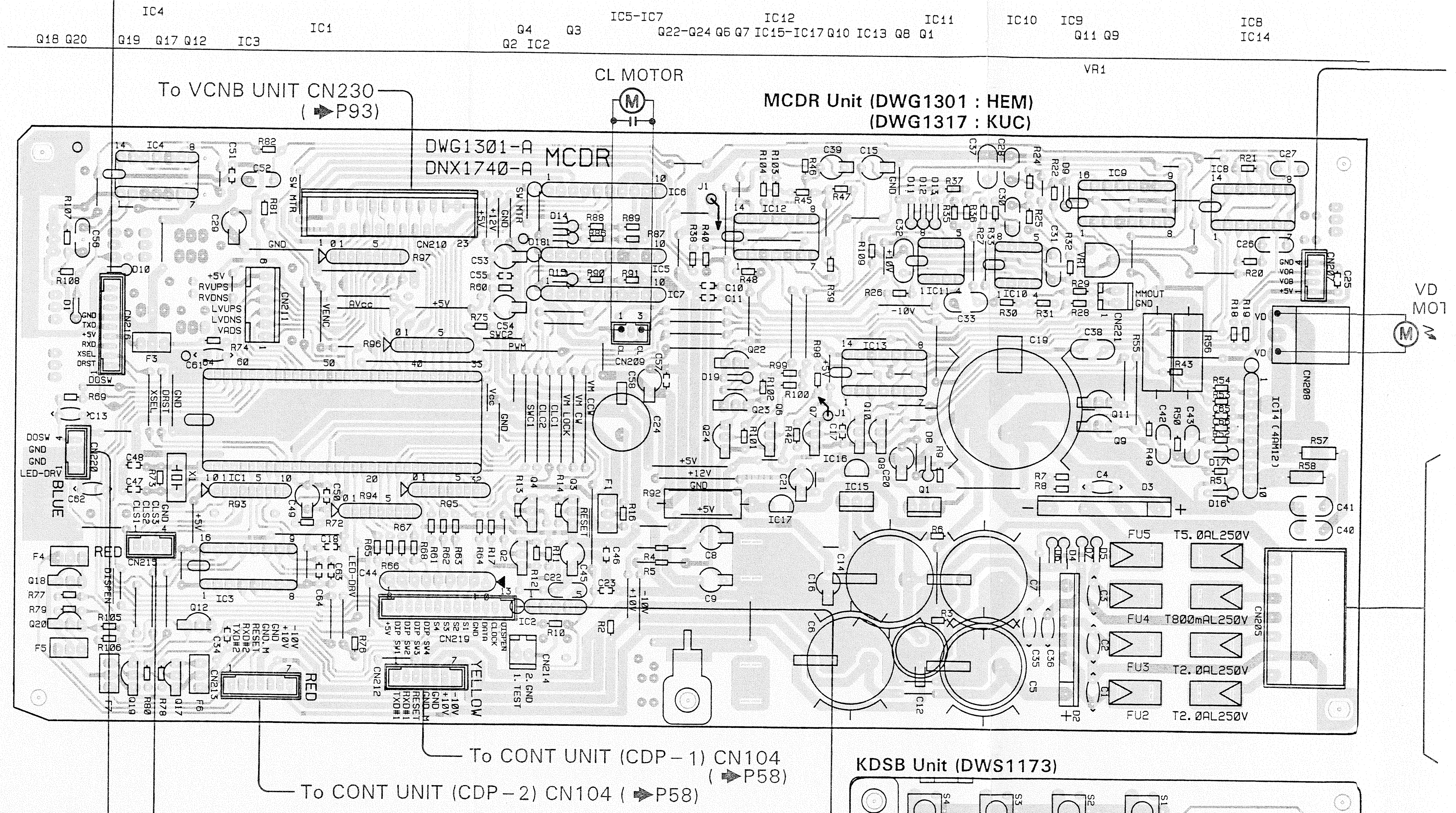
IC302

PIn No	Voltage
1	0.6
2	4.3
3	4.2
4-8	
9	2
10	2.6
11	4.3
12	5

IC303

PIn No	Voltage
1	5
2	4.7
3	0.4
4-8	
9	5
10, 11	2.3

MCDR Unit (DWG1301 : HEM)
(DWG1317 : KUC)


IC4
Q18 Q20
Q19 Q17 Q12
IC3
IC1
Q4
Q2 IC2
Q3
IC5-IC7
Q22-Q24 Q6 Q7 IC15-IC17 Q10 IC13 Q8 Q1
IC12
IC11
IC10
IC9
Q11 Q9
IC8
IC14
VR1
CL MOTOR
To VCNB UNIT CN230
(➔P93)
DWG1301-A
DNX1740-A
MCDR
VD
M01
CN210
CN209
CN208
CN205
CN211
CN216
CN220
CN215
CN213
CN212
CN219
CN214
CN221
BLUE
RED
YELLOW
FU2 T2.0AL250V
FU3 T2.0AL250V
FU4 T800mAL250V
FU5 T5.0AL250V
To CONT UNIT (CDP-1) CN104
(➔P58)
To CONT UNIT (CDP-2) CN104 (➔P58)

MCDR

IC1

PIn No	Voltage
1	2.3
2	2.2
3-6	5
7, 8	0
9	5
10	0
11, 12	5
13, 14	
15	5
16, 17	0
18-22	5
23	0
24-36	5
37	0
38	5
39	0
40-42	5
43, 44	0
45	5
46, 47	0
48-50	
51, 52	0
53-59	5
60	0
61	5
62	4.2
63	0.5
64	0

IC2

PIn No	Voltage
1	5
2, 3	
4	1.2
5	5

IC3

PIn No	Voltage
1	
2-5	5
6-8	
9, 10	0
11	1
12	
13	5
14, 15	4.2
16	

IC4

PIn No	Voltage
1	5
2	2.4
3-5	2.3
6	2.7
7	
8	2.3
9-11	2.7
12, 13	2.3
14	5

IC5

PIn No	Voltage
1	
2	0.5
3	
4	8.2
5, 6	5
7, 8	16
9	
10	0.5

IC6

PIn No	Voltage
1	
2, 3	0.5
4-6	5
7	16
8	7.5
9	16
10	0.5

IC7

PIn No	Voltage
1	
2	0.5
3	
4	7.6
5, 6	5
7, 8	16
9	
10	0.5

IC8

PIn No	Voltage
1	0
2	5
3-5	0
6	5
7	
8-10	5
11	0
12	5
13	0
14	

IC9

PIn No	Voltage
1-3	0
4-14	
15	5
16	0

IC11

PIn No	Voltage
1-3	0
4	
5, 6	0.2
7	1
8	

IC10

PIn No	Voltage
1	0.2
2, 3	0
4	
5-7	0
8	

IC12

PIn No	Voltage
1	0.1
2	4.8
3	
4	0
5	0.4
6	2.7
7, 8	0.2
9	2.5
10	4.8
11	2.5
12	
13, 14	0.1

IC13

PIn No	Voltage
1-6	5
7	0
8, 9	5
10	0
11	5
12	0
13	5
14	

IC14

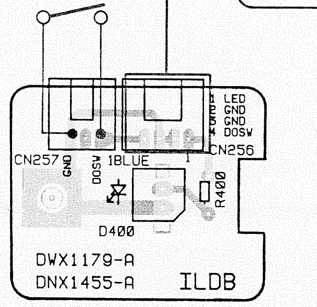
PIn No	Voltage
1	0
2, 3	0
4	5
5	0
6	14
7	0
8	14
9	0
10	

IC16

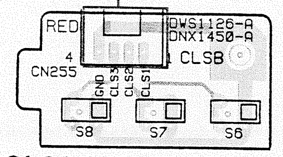
PIn No	Voltage
1	12
3	

	Voltage		
	E	B	C
Q1	12	13	0
Q2	0	0.7	0
Q3, 4	5	4.2	5
Q6	0	0.2	4.5
Q7	0	0.1	5
Q8		5	0
Q9		0	14
Q10		5	0
Q11		0	14
Q12	5	5	-0.4
Q17, 18		0	5
Q19, 20	0	4.2	0
Q22		4.5	0.7
Q23	4.4	3.8	4.4
Q24		4.4	0

DOOR SW

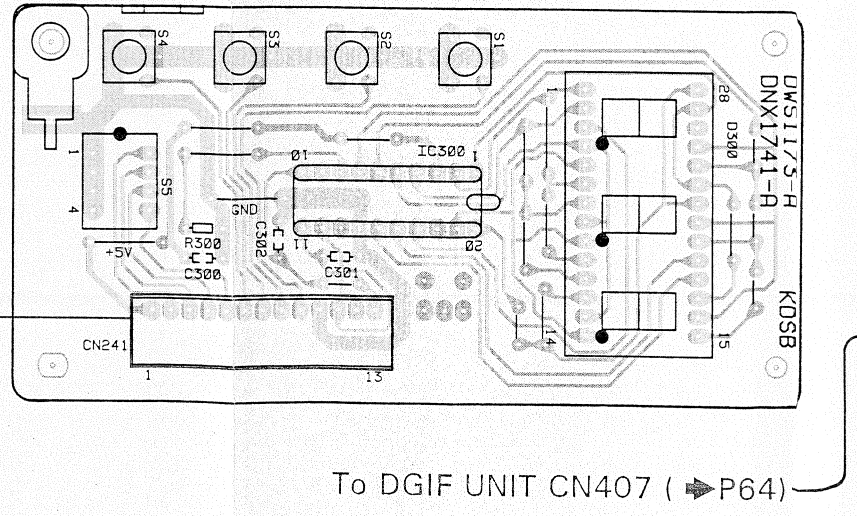

CN257
CN256
D400
BLUE
DWX1179-A
DNX1455-A
ILDB

ILDB Unit (DWX1179)


RED
CN255
DWS1126-A
DNX1450-A
CLSB
S8
S7
S6

CLSB Unit (DWS1126)

KDSB Unit (DWS1173)

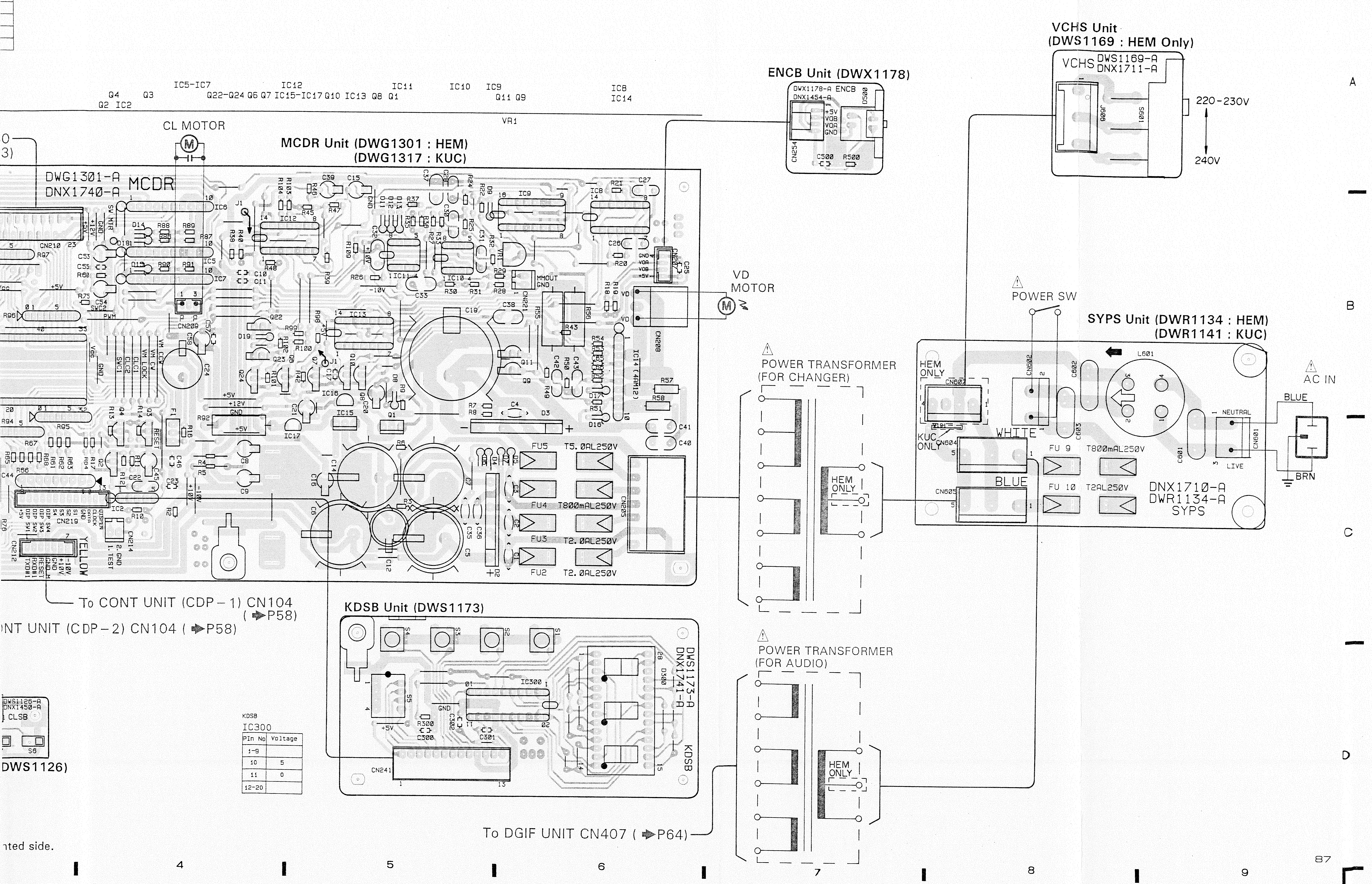

S4
S3
S2
S1
S5
DWS1173-A
DNX1741-A
IC300
C300
C301
R300
CN241
KDSB
To DGIF UNIT CN407 (➔P64)

KDSB

IC300

PIn No	Voltage
1-9	
10	5
11	0
12-20	

This P. C. B connection diagram is viewed from the parts mounted side.

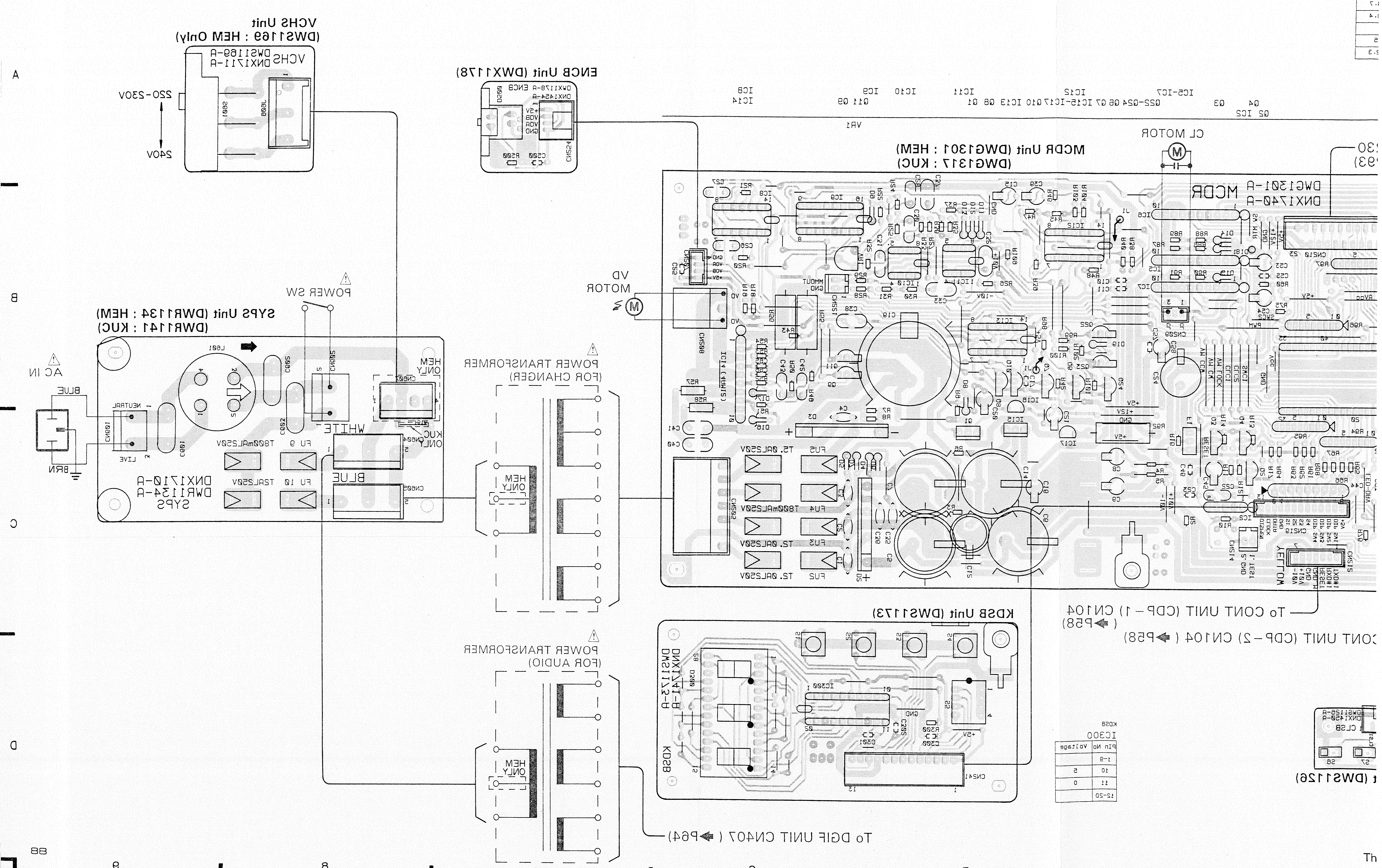

VCHS Unit
(DWS1169 : HEM Only)
VCHS DWS1169-A DNX1711-A
J608
S601
220-230V
240V
ENCB Unit (DWX1178)
DWX1178-A ENCB
DNX1454-A
+5V
VOB
VOA
GND
CN254
C500
R500
D500
IC5-IC7
IC12
IC11
IC10
IC9
IC8
IC14
Q4
Q3
Q22-Q24 Q6 Q7 IC15-IC17 Q10 IC13 Q8 Q1
Q11 Q9
Q2 IC2
VR1
CL MOTOR
MCDR Unit (DWG1301 : HEM)
(DWG1317 : KUC)
DWG1301-A
DNX1740-A
MCDR
VD MOTOR
POWER SW
SYPS Unit (DWR1134 : HEM)
(DWR1141 : KUC)
HEM ONLY
KUC ONLY
CN602
CN603
CN604
CN605
CN601
C601
C602
C603
L601
WHITE
BLUE
FU 9
T800mAL250V
FU 10
T2AL250V
NEUTRAL
LIVE
DNX1710-A
DWR1134-A
SYPS
AC IN
BLUE
BRN
POWER TRANSFORMER
(FOR CHANGER)
HEM ONLY
FU5
T5.0AL250V
FU4
T800mAL250V
FU3
T2.0AL250V
FU2
T2.0AL250V
CN205
CN208
CN207
CN209
CN210
CN212
CN214
CN219
YELLOW
To CONT UNIT (CDP-1) CN104
(➡P58)
NT UNIT (CDP-2) CN104 (➡P58)
KDSB Unit (DWS1173)
DWS1173-A
DNX1741-A
KDSB
IC300
CN241
S1
S2
S3
S4
S5
D300
R300
C300
C301
C302
GND
+5V
POWER TRANSFORMER
(FOR AUDIO)
HEM ONLY
To DGIF UNIT CN407 (➡P64)
DWS1126-A
DNX1450-A
CLSB
S6
(DWS1126)
A
B
C
D
4
5
6
7
8
9

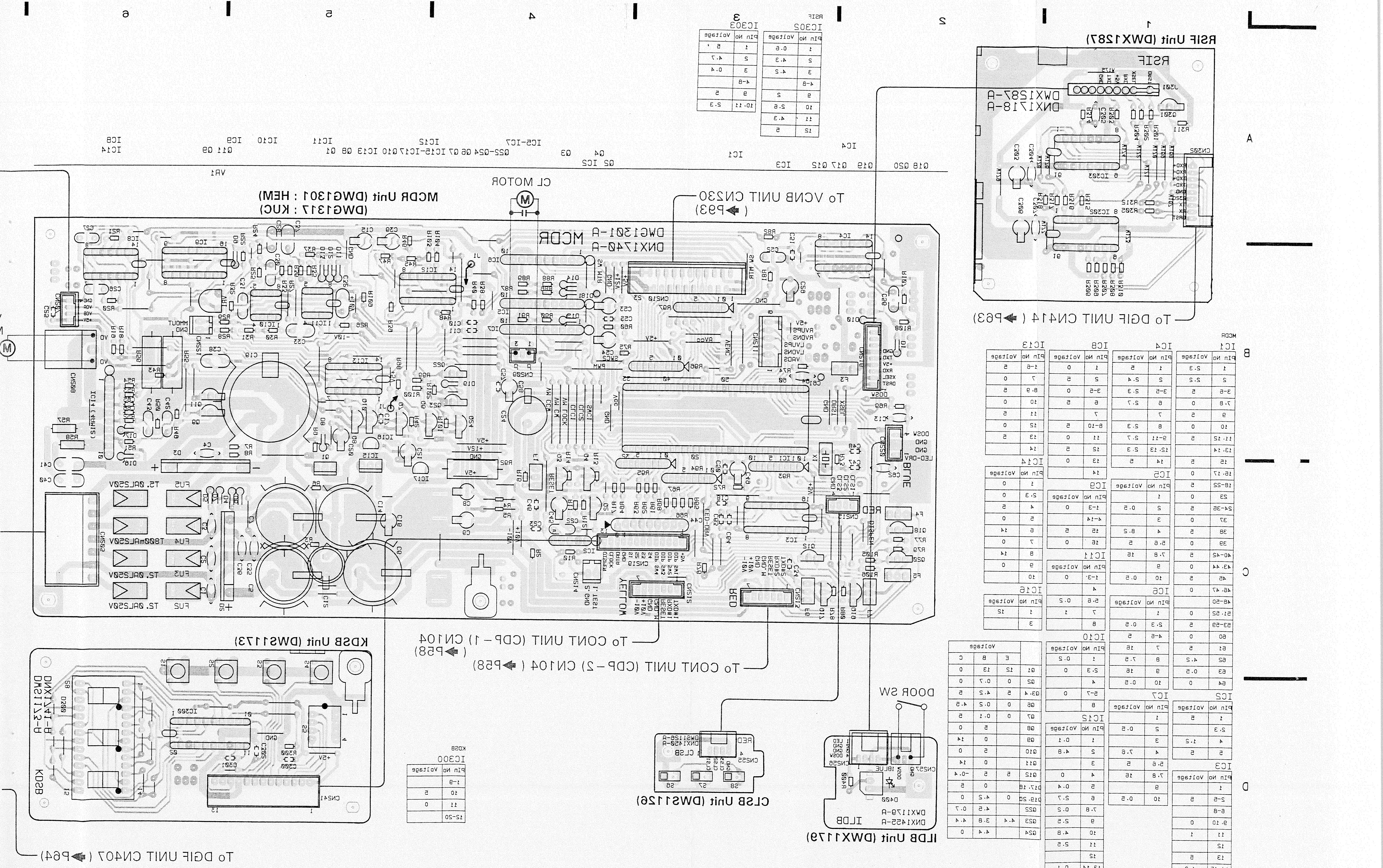
KDSB

IC300

PIn No	Voltage
1-9	
10	5
11	0
12-20	

nted side.


VCHS Unit
(DWS1169 : HEM Only)
VCHS DWS1169-A DNX1711-A
220-230V
240V
ENCB Unit (DWX1178)
ENCB DWX1178-A DNX1454-A
MCDR Unit (DWG1301 : HEM)
(DWG1317 : KUC)
MCDR DWG1301-A DNX1740-A
CL MOTOR
VD MOTOR
POWER SW
SYPS Unit (DWR1134 : HEM)
(DWR1141 : KUC)
SYPS DWR1134-A DNX1710-A
AC IN
BLUE
BRN
NEUTRAL
LIVE
WHITE
HEM ONLY
KUC ONLY
POWER TRANSFORMER
(FOR CHANGER)
POWER TRANSFORMER
(FOR AUDIO)
YELLOW
KDSB Unit (DWS1173)
KDSB DNX1414-B DWS1173-A
To CONT UNIT (CDP-1) CN104 (➡P58)
CONT UNIT (CDP-2) CN104 (➡P58)
To DGIF UNIT CN407 (➡P64)
IC300
Pin No | Voltage
1-8 |
10 | 5
11 | 0
12-20 |
(DWS1126)
CL8B

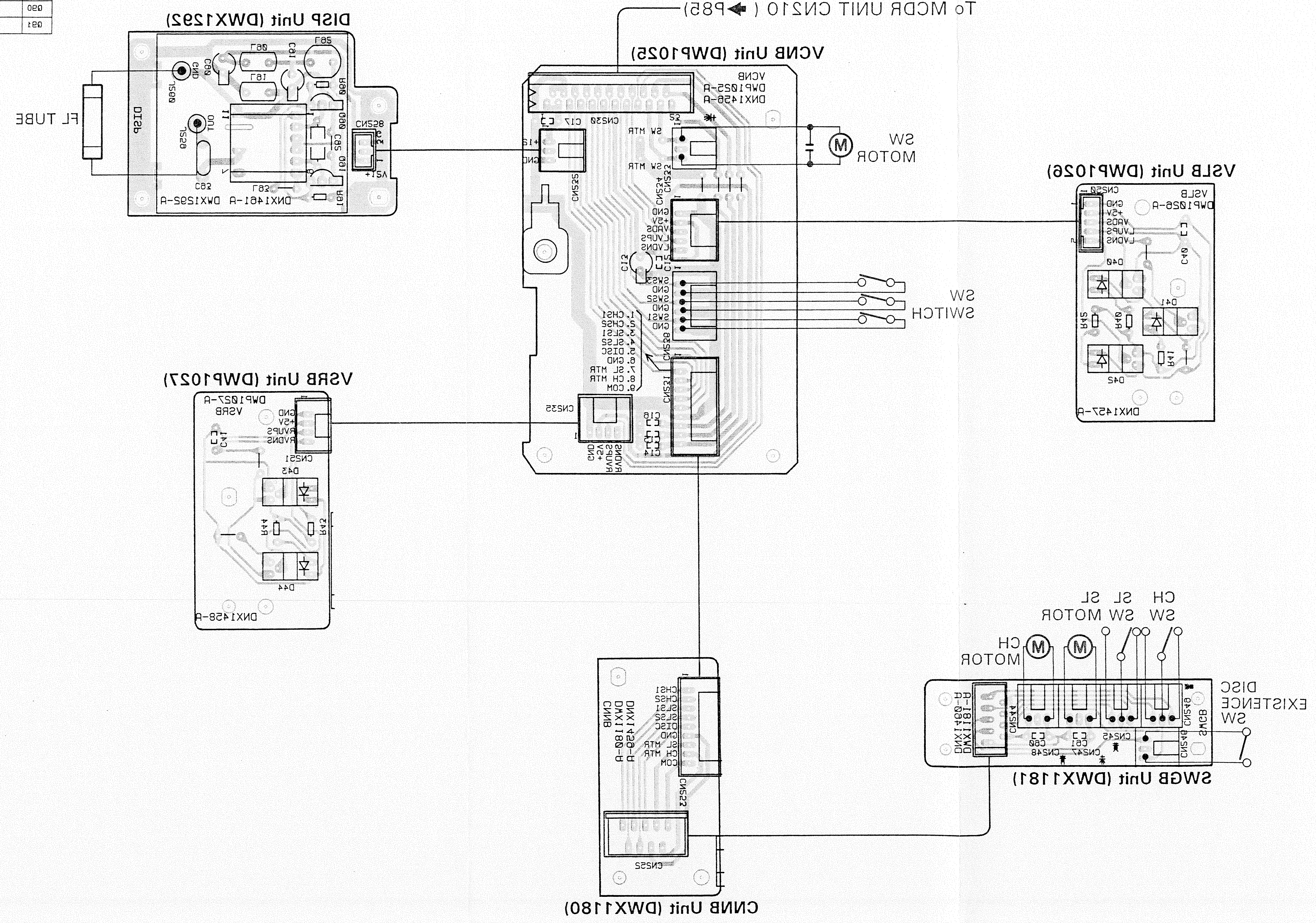

MCDR Unit (DWG1301 : HEM)
(DWG1317 : KUC)
RSIF Unit (DWX1287)
KDSB Unit (DWS1173)
CLSB Unit (DWS1126)
ILDB Unit (DWX1179)
CL MOTOR
DOOR SW
To VCNB UNIT CN230 (➡P93)
To DGIF UNIT CN414 (➡P63)
To CONT UNIT (CDP-1) CN104 (➡P58)
To CONT UNIT (CDP-2) CN104 (➡P58)
To DGIF UNIT CN407 (➡P64)

This P. C. B. connection diagram is viewed from the foil side.

7.7 VCNB UNIT, CNNB UNIT, SWGB UNIT, VSLB UNIT, VSRB UNIT AND DISP UNIT

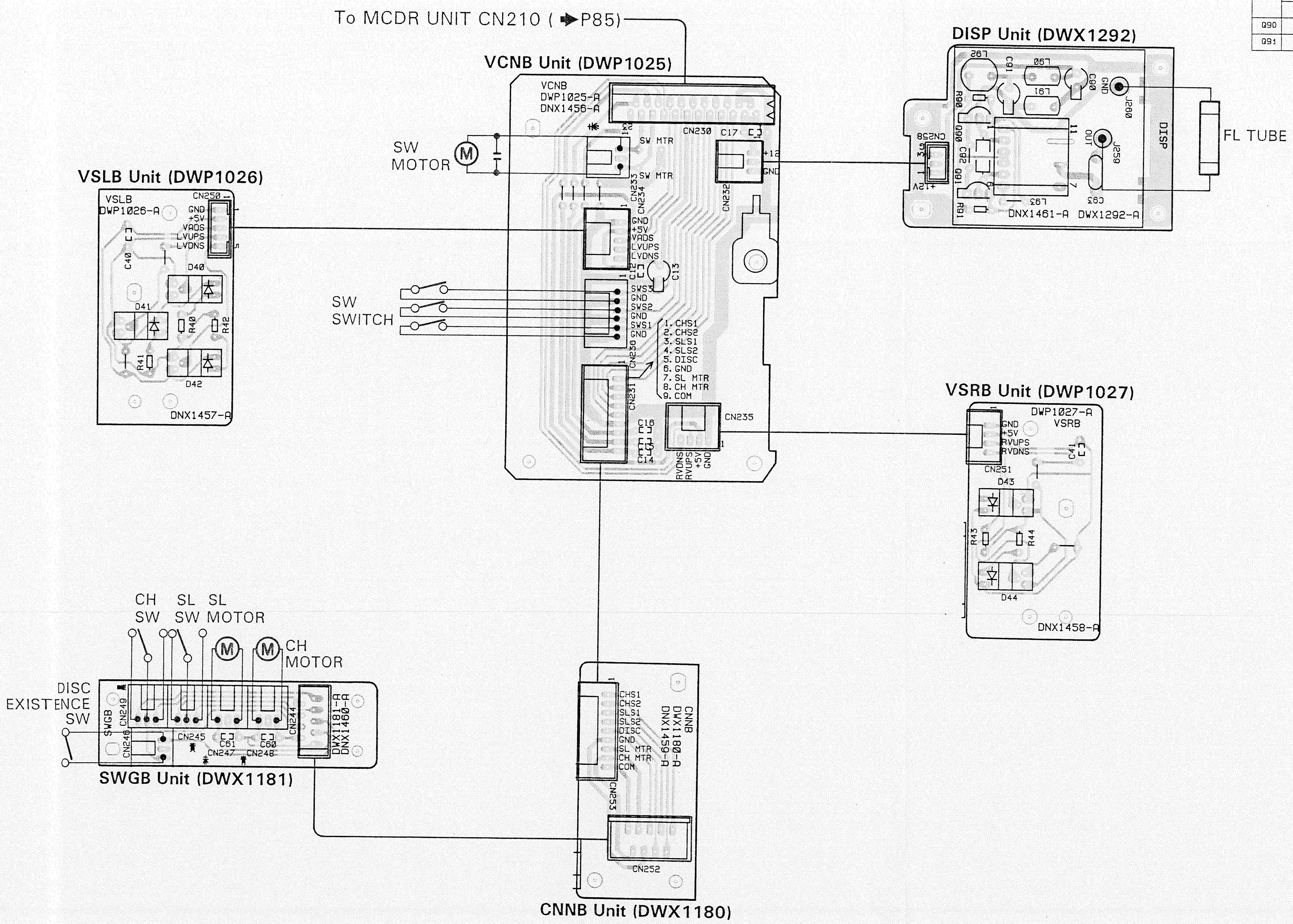
DISP

	E	B	C
		Voltage	
Q90		-0.1	12
Q91		-0.1	12



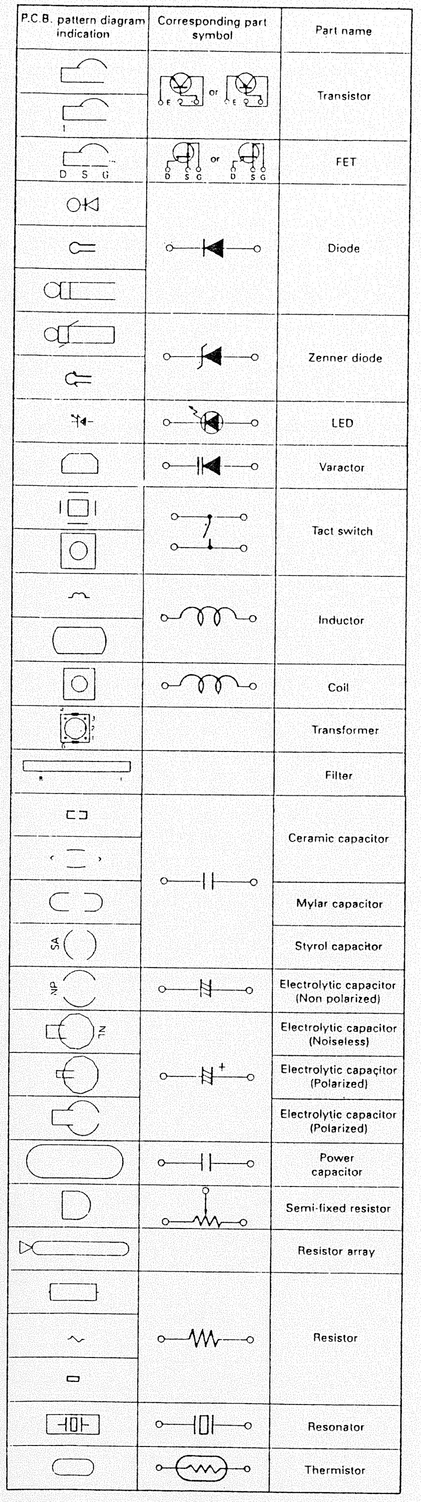
DISP Unit (DWX1292)
FL TUBE
To MCDR UNIT CN210 (◄P85)
VCNB Unit (DWP1025)
SW MOTOR
VSLB Unit (DWP1026)
SW SWITCH
VSRB Unit (DWP1027)
CH SW
SL SW
SL MOTOR
CH MOTOR
DISC EXISTENCE SW
SWGB Unit (DWX1181)
CNNB Unit (DWX1180)

This P. C. B. connection diagram is viewed from the foil side.


To MCDR UNIT CN210 (➧P85)
VCNB Unit (DWP1025)
VCNB
DWP1025-A
DNX1456-A
CN230
C17
CN232
+12
GND
SW MTR
SW MTR
CN233
CN234
GND
+5V
VRDS
LVUPS
LVDNS
C12
C13
SWS3
GND
SWS2
GND
SWS1
GND
CN236
1. CHS1
2. CHS2
3. SLS1
4. SLS2
5. DISC
6. GND
7. SL MTR
8. CH MTR
9. COM
CN231
C16
C15
C14
CN235
RVDNS
RVUPS
+5V
GND
SW
MOTOR
SW
SWITCH
VSLB Unit (DWP1026)
VSLB
DWP1026-A
CN250
GND
+5V
VRDS
LVUPS
LVDNS
C40
D40
D41
R40
R42
R41
D42
DNX1457-A
DISP Unit (DWX1292)
D92
D90
D91
C91
C90
GND
J260
R90
CN258
+12V
C92
D93
11
OUT
J259
R91
L92
C93
DNX1461-A
DWX1292-A
DISP
FL TUBE
VSRB Unit (DWP1027)
DWP1027-A
VSRB
GND
+5V
RVUPS
RVDNS
C41
CN251
D43
R43
R44
D44
DNX1458-A
CH
SW
SL
SW
SL
MOTOR
CH
MOTOR
DISC
EXISTENCE
SW
SWGB
CN249
CN246
CN245
C61
C60
CN247
CN248
CN244
DWX1181-A
DNX1460-A
SWGB Unit (DWX1181)
CNNB
DWX1180-A
DNX1459-A
CHS1
CHS2
SLS1
SLS2
DISC
GND
SL MTR
CH MTR
COM
CN253
CN252
CNNB Unit (DWX1180)

DISP

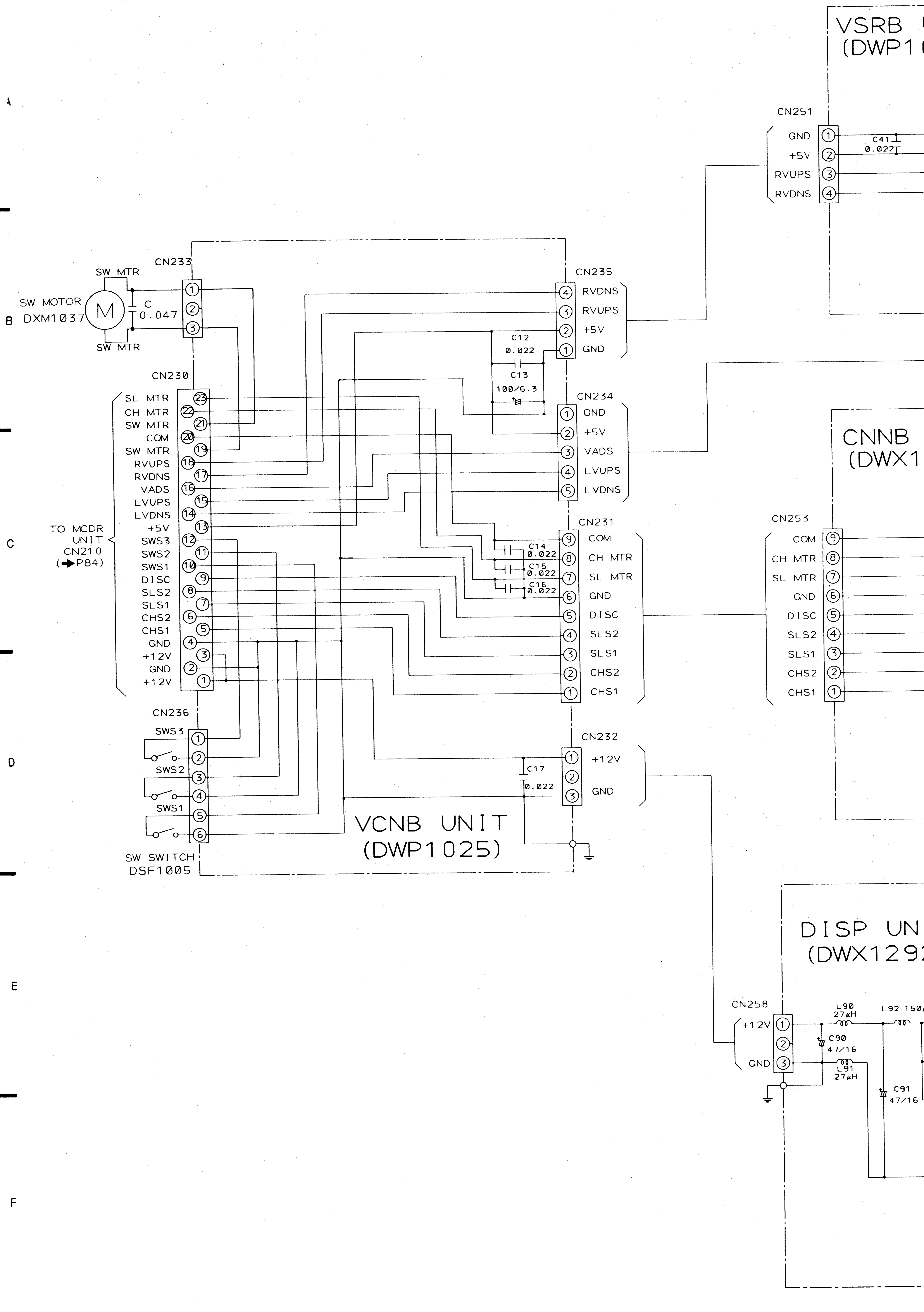
	Voltage		
	E	B	C
Q90		-0.1	12
Q91		-0.1	12

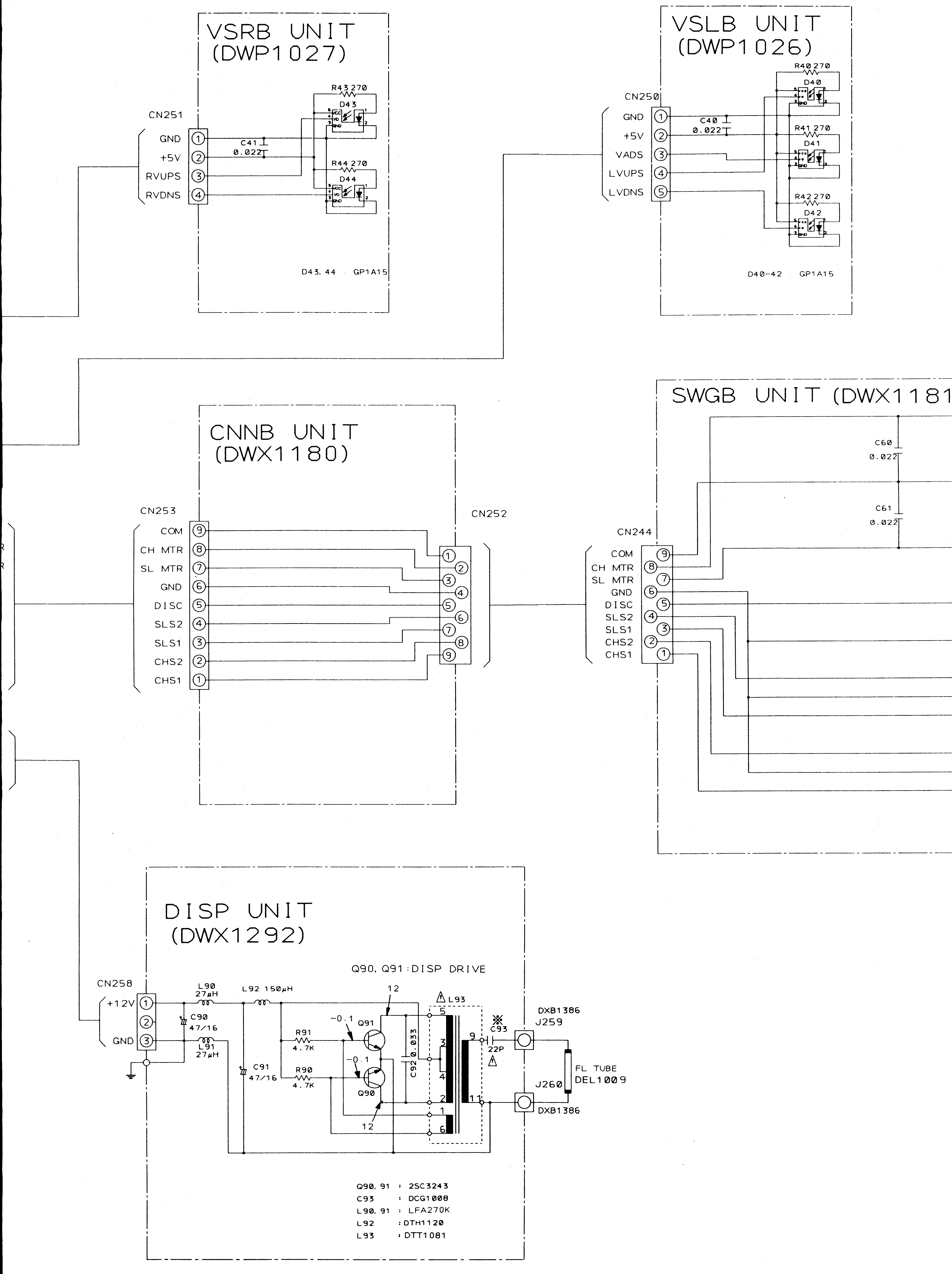


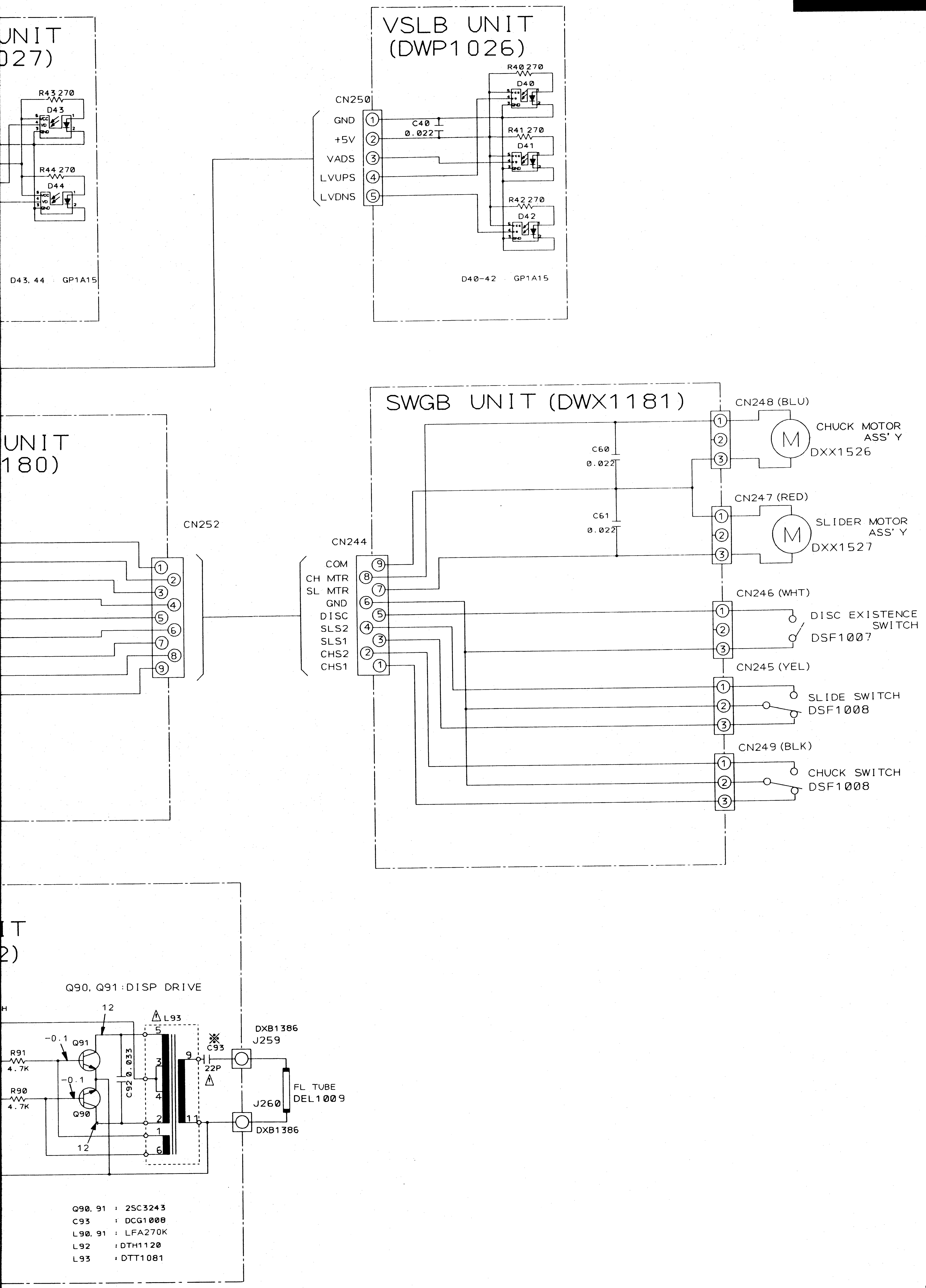
P.C.B. pattern diagram indication	Corresponding part symbol	Part name
		Transistor
		FET
		Diode
		Zenner diode
		LED
		Varactor
		Tact switch
		Inductor
		Coil
		Transformer
		Filter
		Ceramic capacitor
		Mylar capacitor
		Styrol capacitor
		Electrolytic capacitor (Non polarized)
		Electrolytic capacitor (Noiseless)
		Electrolytic capacitor (Polarized)
		Electrolytic capacitor (Polarized)
		Power capacitor
		Semi-fixed resistor
		Resistor array
		Resistor
		Resonator
		Thermistor

1. This P.C.B. connection diagram is viewed from the parts mounted side.
2. The parts which have been mounted on the board can be replaced with those shown with the corresponding wiring symbols listed in the above Table.
3. The capacitor terminal marked with ▭ shows negative terminal.
4. The diode marked with ○ shows cathode side.
5. The transistor terminal marked with ▭ shows emitter.

This P. C. B connection diagram is viewed from the parts mounted side.


1
2
3
4
B
C
D
E
F
SW MOTOR
DXM1037
M
SW MTR
SW MTR
C
0.047
CN233
CN230
SL MTR
CH MTR
SW MTR
COM
SW MTR
RVUPS
RVDNS
VADS
LVUPS
LVDNS
+5V
SWS3
SWS2
SWS1
DISC
SLS2
SLS1
CHS2
CHS1
GND
+12V
GND
+12V
TO MCDR
UNIT
CN210
(➡P84)
CN236
SWS3
SWS2
SWS1
SW SWITCH
DSF1005
CN235
RVDNS
RVUPS
+5V
GND
C12
0.022
C13
100/6.3
CN234
GND
+5V
VADS
LVUPS
LVDNS
CN231
COM
CH MTR
SL MTR
GND
DISC
SLS2
SLS1
CHS2
CHS1
C14
0.022
C15
0.022
C16
0.022
CN232
+12V
GND
C17
0.022
VCNB UNIT
(DWP1025)
VSRB
(DWP1
CN251
GND
+5V
RVUPS
RVDNS
C41
0.022
CNNB
(DWX1
CN253
COM
CH MTR
SL MTR
GND
DISC
SLS2
SLS1
CHS2
CHS1
DISP UN
(DWX129
CN258
+12V
GND
L90
27μH
C90
47/16
L91
27μH
L92 150
C91
47/16


VSRB UNIT
(DWP1027)
CN251
GND ①
+5V ②
RVUPS ③
RVDNS ④
C41
0.022
R43 270
D43
R44 270
D44
D43, 44 : GP1A15
VSLB UNIT
(DWP1026)
CN250
GND ①
+5V ②
VADS ③
LVUPS ④
LVDNS ⑤
C40
0.022
R40 270
D40
R41 270
D41
R42 270
D42
D40–42 : GP1A15
CNNB UNIT
(DWX1180)
CN253
COM ⑨
CH MTR ⑧
SL MTR ⑦
GND ⑥
DISC ⑤
SLS2 ④
SLS1 ③
CHS2 ②
CHS1 ①
CN252
SWGB UNIT (DWX1181
C60
0.022
C61
0.022
CN244
COM ⑨
CH MTR ⑧
SL MTR ⑦
GND ⑥
DISC ⑤
SLS2 ④
SLS1 ③
CHS2 ②
CHS1 ①
DISP UNIT
(DWX1292)
Q90, Q91 : DISP DRIVE
CN258
+12V ①
②
GND ③
L90
27μH
C90
47/16
L91
27μH
L92 150μH
C91
47/16
R91
4.7K
R90
4.7K
-0.1
Q91
-0.1
Q90
12
12
C92 0.033
L93
5
3
4
2
1
6
9
11
C93
22P
DXB1386
J259
J260
DXB1386
FL TUBE
DEL1009
Q90, 91 : 2SC3243
C93 : DCG1008
L90, 91 : LFA270K
L92 : DTH1120
L93 : DTT1081


UNIT
027)
R43 270
D43
R44 270
D44
D43, 44 : GP1A15
VSLB UNIT
(DWP1026)
R40 270
D40
R41 270
D41
R42 270
D42
CN250
GND ①
+5V ②
VADS ③
LVUPS ④
LVDNS ⑤
C40
0.022
D40-42 : GP1A15
UNIT
180)
CN252
SWGB UNIT (DWX1181)
CN244
COM ⑨
CH MTR ⑧
SL MTR ⑦
GND ⑥
DISC ⑤
SLS2 ④
SLS1 ③
CHS2 ②
CHS1 ①
C60
0.022
C61
0.022
CN248 (BLU)
CHUCK MOTOR ASS'Y
DXX1526
CN247 (RED)
SLIDER MOTOR ASS'Y
DXX1527
CN246 (WHT)
DISC EXISTENCE SWITCH
DSF1007
CN245 (YEL)
SLIDE SWITCH
DSF1008
CN249 (BLK)
CHUCK SWITCH
DSF1008
IT
2)
Q90, Q91 : DISP DRIVE
12
-0.1
Q91
R91
4.7K
-0.1
R90
4.7K
Q90
12
C92 0.033
L93
5
3
4
2
1
6
9
11
※
C93
22P
DXB1386
J259
FL TUBE
DEL1009
J260
DXB1386
Q90, 91 : 2SC3243
C93 : DCG1008
L90, 91 : LFA270K
L92 : DTH1120
L93 : DTT1081

8. PCB PARTS LIST

NOTES:

- *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Parts marked by "◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*
- *When ordering resistors, first convert resistance values into code form as shown in the following examples.*

Ex. 1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J = 5%, and K = 10%).

560Ω → 56×10^1 → 561 .... RD1/8PM 5⃞ 6⃞ 1⃞ J
47kΩ → 47×10^3 → 473 .... RD1/4PS 4⃞ 7⃞ 3⃞ J
0.5Ω → 0R5 .... RN2H 0⃞ R⃞ 5⃞ K
1Ω → 010 .... RS1P 0⃞ 1⃞ 0⃞ K

Ex. 2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62kΩ → 562×10^1 → 5621 .... RN1/4PC 5⃞ 6⃞ 2⃞ 1⃞ F

LIST OF ASSEMBLIES

Mark	No.	Description	Parts No.
◉		MCDR UNIT	DWG1301
◉		CONT UNIT	DWG1302
◉		DACB UNIT	DWM1281
◉		VCNB UNIT	DWP1025
◉		VSLB UNIT	DWP1026
◉		VSRB UNIT	DWP1027
◉		SYPS UNIT	DWR1134
◉		CLSB UNIT	DWS1126
◉		VCHS UNIT	DWS1169
◉		KDSB UNIT	DWS1173
◉		ENCB UNIT	DWX1178
◉		ILDB UNIT	DWX1179
◉		CNNB UNIT	DWX1180
◉		SWGB UNIT	DWX1181
◉		ANLG UNIT	DWX1281
◉		DGIF UNIT	DWX1282
◉		XLR1 UNIT	DWX1283
◉		XLR2 UNIT	DWX1284
◉		CNCT UNIT	DWX1286
◉		RSIF UNIT	DWX1287
◉		AUOB UNIT	DWX1288
◉		BRAN UNIT	DWX1289
◉		CDPS UNIT	DWX1290
◉		DISP UNIT	DWX1292

MCDR UNIT

SEMICONDUCTORS

Mark	No.	Description	Parts No.
	IC1	MICRO-COMPUTER IC	PD3222A
	IC10	LINEAR IC	NJM4565D
	IC11	LINEAR IC	NJM4565D
	IC12	COMPARATOR	BA10339
	IC13	LOGIC IC	TC74HC32AP
	IC14	POWER MOSFET ARRAY	4AM12
	IC15	IC	LM2940CT−5.0
⚠	IC16	IC PROTECTOR	ICP−N10
⚠	IC17	IC PROTECTOR	ICP−N38
	IC2	SYSTEM PRESET IC	M51953BL
	IC3	MULTIPLEXOR	TC74HC4052AP
	IC4	LOGIC IC	TC74HC00AP
	IC5	LINEAR IC	TA7291P
	IC6	MOTOR DRIVER IC	TA7288P
	IC7	LINEAR IC	TA7291P
	IC8	IC	TC4077BP
	IC9	CMOS, IC	TC74HC123AP
	Q1	TRANSISTOR	2SD1266
	Q10	TRANSISTOR	DTC124ES
	Q11, 12	TRANSISTOR	DTA124ES
	Q17−19	TRANSISTOR	DTC124ES
	Q2	TRANSISTOR	2SC1740S
	Q20	TRANSISTOR	DTC124ES
	Q22, 23	TRANSISTOR	2SA933S
	Q24	TRANSISTOR	DTC124ES
	Q3, 4	TRANSISTOR	2SA1015
	Q6−8	TRANSISTOR	DTC124ES
	Q9	TRANSISTOR	DTA124ES
	D1	DIODE	1SS254
	D10−13	DIODE	1SS254
	D14−17	ZENER DIODE	MTZ7.5B
	D18	ZENER DIODE	MTZ8.2B
	D19	DIODE	1SS254
⚠	D2	DIODE BRIDGE	RBA−402
⚠	D3	DIODE	RBA−406B
⚠	D4−7	RECTIFIER DIODE	1SR139−400
	D8	ZENER DIODE	MTZ13A
	D9	DIODE	1SS254

COILS

Mark	No.	Description	Parts No.
	F1	FILTER	VTH1001
	F3−7	FILTER	VTH1001

CAPACITORS

Mark	No.	Description	Parts No.
	C1	CERAMIC CAPACITOR	CKCYF103Z50
	C10, 11	CERAMIC CAPACITOR	CKPUYF223Z25
	C12	ELECT. CAPACITOR	CEAS102M16
	C13	CERAMIC CAPACITOR	CKCYF222Z50
	C14	CAPACITOR (4700/16)	DCH1024
	C15	ELECT. CAPACITOR	CEAS220M50
	C16	ELECT. CAPACITOR	CEAS101M10
	C17, 18	CERAMIC CAPACITOR	CKPUYF223Z25
	C19	ELECT. CAPACITOR (8200/25)	DCH1035
	C2	CERAMIC CAPACITOR	CKCYF103Z50
	C20	ELECT. CAPACITOR	CEAS470M25
	C21	ELECT. CAPACITOR	CEAS470M16
	C22	AUDIO FILM CAPACITOR	CFTXA683J50
	C23	CERAMIC CAPACITOR	CKPUYF223Z25
	C24	CAPACITOR (0.22F)	DCH1037
	C25	CERAMIC CAPACITOR	CKPUYF223Z25
	C26, 27	MYLAR FILM CAPACITOR	CQMA152J50
	C28	MYLAR FILM CAPACITOR	CQMA102J50
	C29	ELECT. CAPACITOR	CEAS101M10
	C3	CERAMIC CAPACITOR	CKCYF103Z50
	C30, 31	AUDIO FILM CAPACITOR	CFTXA823J50
	C32, 33	AUDIO FILM CAPACITOR	CFTXA224J50
	C34	CERAMIC CAPACITOR	CKPUYF223Z25
	C35, 36	CERAMIC CAPACITOR	CKCYF103Z50
	C37	AUDIO FILM CAPACITOR	CFTXA224J50
	C38	MYLAR FILM CAPACITOR	CQMA223J50
	C39	ELECT. CAPACITOR	CEASR47M50
	C4	CERAMIC CAPACITOR	CKCYF103Z50
	C40, 41	MYLAR FILM CAPACITOR	CQMA473J50
	C42, 43	MYLAR FILM CAPACITOR	CQMA472J50
	C44	CAPACITOR ARRAY (2200p ×8)	DCG1004
	C45	ELECT. CAPACITOR	CEAS101M10
	C46	CERAMIC CAPACITOR	CKPUYF223Z25
	C47, 48	AXIAL CAPACITOR	CCPUSL150J50
	C49	ELECT. CAPACITOR	CEAS101M10
	C5	CAPACITOR (3300/16)	DCH1023
	C50, 51	CERAMIC CAPACITOR	CKPUYF223Z25
	C52	MYLAR FILM CAPACITOR	CQMA392J50
	C53	ELECT. CAPACITOR	CEAS101M10
	C54	ELECT. CAPACITOR	CEAS470M25
	C55	CERAMIC CAPACITOR	CKPUYF223Z25
	C56	MYLAR FILM CAPACITOR	CQMA472J50
	C57	CERAMIC CAPACITOR	CKPUYF223Z25
	C58	ELECT. CAPACITOR	CEAS470M25
	C6	CAPACITOR (4700/16)	DCH1024
	C61, 62	CERAMIC CAPACITOR	CKDYB471K50
	C63, 64	CERAMIC CAPACITOR	CKPUYB102K50
	C65, 66	CERAMIC CAPACITOR	CKPUYF223Z25
	C7	CAPACITOR (4700/16)	DCH1024
	C8, 9	ELECT. CAPACITOR	CEAS470M16

Mark	No.	Description	Parts No.
	C15	ELECT. CAPACITOR	CEAS220M50
	C16	ELECT. CAPACITOR	CEAS101M10
	C17, 18	CERAMIC CAPACITOR	CKPUYF223Z25
	C19	ELECT. CAPACITOR (8200/25)	DCH1035
	C2	CERAMIC CAPACITOR	CKCYF103Z50
	C20	ELECT. CAPACITOR	CEAS470M25
	C21	ELECT. CAPACITOR	CEAS470M16
	C22	AUDIO FILM CAPACITOR	CFTXA683J50
	C23	CERAMIC CAPACITOR	CKPUYF223Z25
	C24	CAPACITOR (0.22F)	DCH1037
	C25	CERAMIC CAPACITOR	CKPUYF223Z25
	C26, 27	MYLAR FILM CAPACITOR	CQMA152J50
	C28	MYLAR FILM CAPACITOR	CQMA102J50
	C29	ELECT. CAPACITOR	CEAS101M10
	C3	CERAMIC CAPACITOR	CKCYF103Z50
	C30, 31	AUDIO FILM CAPACITOR	CFTXA823J50
	C32, 33	AUDIO FILM CAPACITOR	CFTXA224J50
	C34	CERAMIC CAPACITOR	CKPUYF223Z25
	C35, 36	CERAMIC CAPACITOR	CKCYF103Z50
	C37	AUDIO FILM CAPACITOR	CFTXA224J50
	C38	MYLAR FILM CAPACITOR	CQMA223J50
	C39	ELECT. CAPACITOR	CEASR47M50
	C4	CERAMIC CAPACITOR	CKCYF103Z50
	C40, 41	MYLAR FILM CAPACITOR	CQMA473J50
	C42, 43	MYLAR FILM CAPACITOR	CQMA472J50
	C44	CAPACITOR ARRAY (2200p ×8)	DCG1004
	C45	ELECT. CAPACITOR	CEAS101M10
	C46	CERAMIC CAPACITOR	CKPUYF223Z25
	C47, 48	AXIAL CAPACITOR	CCPUSL150J50
	C49	ELECT. CAPACITOR	CEAS101M10
	C5	CAPACITOR (3300/16)	DCH1023
	C50, 51	CERAMIC CAPACITOR	CKPUYF223Z25
	C52	MYLAR FILM CAPACITOR	CQMA392J50
	C53	ELECT. CAPACITOR	CEAS101M10
	C54	ELECT. CAPACITOR	CEAS470M25
	C55	CERAMIC CAPACITOR	CKPUYF223Z25
	C56	MYLAR FILM CAPACITOR	CQMA472J50
	C57	CERAMIC CAPACITOR	CKPUYF223Z25
	C58	ELECT. CAPACITOR	CEAS470M25
	C6	CAPACITOR (4700/16)	DCH1024
	C61, 62	CERAMIC CAPACITOR	CKDYB471K50
	C63, 64	CERAMIC CAPACITOR	CKPUYB102K50
	C65, 66	CERAMIC CAPACITOR	CKPUYF223Z25
	C7	CAPACITOR (4700/16)	DCH1024
	C8, 9	ELECT. CAPACITOR	CEAS470M16

RESISTORS

Mark	No.	Description	Parts No.
	VR1	SEMI−FIXED RESISTOR	VRTB6VS103
	R32, 33	METALFILM RESISTOR	RN1/6PQ4702F
	R4, 5	CARBON FILM RESISTOR	RD1/2LF4R7J
	R55, 56	METAL OXIDE RESISTOR	RS3LMFR22J
	R57, 58	CARBON FILM RESISTOR	RD1/2PMF4R7J
	R92	METAL OXIDE RESISTOR	RS3LMF2R2J
	R93	RESISTOR ARRAY (10k)	RA8T103J
	R94−96	RESISTOR ARRAY (10k)	RA8T222J
	R97	RESISTOR ARRAY (10k)	RA8T103J
		Other resistors	RD1/6PM□□□J

OTHERS

Mark	No.	Description	Parts No.
	X1	CRYSTAL RESONATOR (9.8304MHz)	DSS1010
	CN211	6P TOP POST	B6P−SHF−1AA

CONT UNIT

SEMICONDUCTORS

Mark	No.	Description	Parts No.
	IC1	PRE AMP IC	CXA1471S
	IC10	VCO	SN74LS624N
	IC11	LOGIC IC	TC74HCT04AP
⚠	IC12, 13	IC PROTECTOR	ICP−N10
⚠	IC15, 16	IC PROTECTOR	ICP−N20
	IC2	EFM DEMODULATION IC	CXD2500AQ
	IC3	OP−AMP IC	NJM4558DX
	IC4	SERVO IC	CXA1372S
	IC5, 6	POWER OP AMP	TA7256P
⚠	IC8	REGULATOR IC	NJM79L05A
	IC9	MICRO-COMPUTER IC	PD0140B
	Q1	TRANSISTOR	2SA854S
	Q2	TRANSISTOR	2SC3581
	Q3	TRANSISTOR	2SA1399
	Q4	TRANSISTOR	2SC3581
	Q5	TRANSISTOR	2SA1399
	Q6−8	TRANSISTOR	DTC124ES
	D1	ZENER DIODE	MTZJ5.1B

COILS

Mark	No.	Description	Parts No.
	F1, 2	FILTER	VTH1001

CAPACITORS

Mark	No.	Description	Parts No.
	C1	CERAMIC CAPACITOR	CKCYF103Z50
	C10	ELECT. CAPACITOR	CEAS330M16
	C11	MYLAR FILM CAPACITOR	CQMA182J50
	C12	MYLAR FILM CAPACITOR	CQMA333K50
	C13	MYLAR FILM CAPACITOR	CQMA103K50
	C14, 15	MYLAR FILM CAPACITOR	CQMA104K50
	C16	ELECT. CAPACITOR	CEAS010M50
	C17	MYLAR FILM CAPACITOR	CQMA104K50
	C18	ELECT. CAPACITOR	CEAS4R7M50
	C19, 2	ELECT. CAPACITOR	CEAS101M10
	C20	MYLAR FILM CAPACITOR	CQMA104K50
	C21	MYLAR FILM CAPACITOR	CQMA103K50
	C22	MYLAR FILM CAPACITOR	CQMA472K50
	C23	MYLAR FILM CAPACITOR	CQMA472J50
	C24	MYLAR FILM CAPACITOR	CQMA332J50
	C25	MYLAR FILM CAPACITOR	CQMA103K50
	C26	ELECT. CAPACITOR	CEAS101M10
	C27	MYLAR FILM CAPACITOR	CQMA333K50
	C28, 3	ELECT. CAPACITOR	CEAS101M10
	C30	MYLAR FILM CAPACITOR	CQMA473J50
	C31, 32	CERAMIC CAPACITOR	CCCCH150J50
	C33	CERAMIC CAPACITOR	CKCYB152K50
	C34	ELECT. CAPACITOR	CEAS331M6R3
	C35	ELECT. CAPACITOR	CEAS330M16
	C36	MYLAR FILM CAPACITOR	CQMA103K50
	C37	ELECT. CAPACITOR	CEASR47M50
	C38	CERAMIC CAPACITOR	CKCYF103Z50
	C39	CERAMIC CAPACITOR	CCCCH330J50
	C4	ELECT. CAPACITOR	CEAS101M10
	C40	CERAMIC CAPACITOR	CKCYF103Z50
	C41−43	ELECT. CAPACITOR	CEAS330M16
	C44	ELECT. CAPACITOR	CEAS101M10
	C45	CERAMIC CAPACITOR	CKCYF103Z50
	C46, 47	CERAMIC CAPACITOR	CCCCH220J50
	C48, 49	CERAMIC CAPACITOR	CKCYF103Z50
	C5	CERAMIC CAPACITOR	CCCCH180J50
	C50, 51	CERAMIC CAPACITOR	CKCYF103Z50
	C52, 53	ELECT. CAPACITOR	CEAS470M16
	C54	ELECT. CAPACITOR	CEAS331M6R3
	C55	ELECT. CAPACITOR	CEAS221M10
	C56	CERAMIC CAPACITOR	CCCSL221J50
	C57, 58	ELECT. CAPACITOR	CEANP010M50
	C59	CERAMIC CAPACITOR	CCCSL221J50
	C6	MYLAR FILM CAPACITOR	CQMA104K50
	C60, 61	CERAMIC CAPACITOR	CCCSL221J50
	C62	ELECT. CAPACITOR	CEANP010M50
	C63	CERAMIC CAPACITOR	CCCSL221J50
	C64	ELECT. CAPACITOR	CEAS330M16
	C65	CERAMIC CAPACITOR	CKCYB471K50
	C66	CERAMIC CAPACITOR	CKCYF103Z50
	C67	CERAMIC CAPACITOR	CCCSL121J50
	C7	MYLAR FILM CAPACITOR	CQMA393K50

ark	No.	Description	Parts No.
ESISTORS			
	VR1	SEMI−FIXED RESISTOR	VRTB6VS103
	R32, 33	METALFILM RESISTOR	RN1/6PQ4702F
	R4, 5	CARBON FILM RESISTOR	RD1/2LF4R7J
	R55, 56	METAL OXIDE RESISTOR	RS3LMFR22J
	R57, 58	CARBON FILM RESISTOR	RD1/2PMF4R7J
	R92	METAL OXIDE RESISTOR	RS3LMF2R2J
	R93	RESISTOR ARRAY (10k)	RA8T103J
	R94−96	RESISTOR ARRAY (10k)	RA8T222J
	R97	RESISTOR ARRAY (10k)	RA8T103J
		Other resistors	RD1/6PM□□□J
THERS			
	X1	CRYSTAL RESONATOR (9.8304MHz)	DSS1010
	CN211	6P TOP POST	B6P−SHF−1AA

ONT UNIT

EMICONDUCTORS			
	IC1	PRE AMP IC	CXA1471S
	IC10	VCO	SN74LS624N
	IC11	LOGIC IC	TC74HCT04AP
	IC12, 13	IC PROTECTOR	ICP−N10
	IC15, 16	IC PROTECTOR	ICP−N20
	IC2	EFM DEMODULATION IC	CXD2500AQ
	IC3	OP−AMP IC	NJM4558DX
	IC4	SERVO IC	CXA1372S
	IC5, 6	POWER OP AMP	TA7256P
	IC8	REGULATOR IC	NJM79L05A
	IC9	MICRO-COMPUTER IC	PD0140B
	Q1	TRANSISTOR	2SA854S
	Q2	TRANSISTOR	2SC3581
	Q3	TRANSISTOR	2SA1399
	Q4	TRANSISTOR	2SC3581
	Q5	TRANSISTOR	2SA1399
	Q6−8	TRANSISTOR	DTC124ES
	D1	ZENER DIODE	MTZJ5.1B
OILS			
	F1, 2	FILTER	VTH1001
APACITORS			
	C1	CERAMIC CAPACITOR	CKCYF103Z50
	C10	ELECT. CAPACITOR	CEAS330M16
	C11	MYLAR FILM CAPACITOR	CQMA182J50
	C12	MYLAR FILM CAPACITOR	CQMA333K50
	C13	MYLAR FILM CAPACITOR	CQMA103K50

Mark	No.	Description	Parts No.
	C14, 15	MYLAR FILM CAPACITOR	CQMA104K50
	C16	ELECT. CAPACITOR	CEAS010M50
	C17	MYLAR FILM CAPACITOR	CQMA104K50
	C18	ELECT. CAPACITOR	CEAS4R7M50
	C19, 2	ELECT. CAPACITOR	CEAS101M10
	C20	MYLAR FILM CAPACITOR	CQMA104K50
	C21	MYLAR FILM CAPACITOR	CQMA103K50
	C22	MYLAR FILM CAPACITOR	CQMA472K50
	C23	MYLAR FILM CAPACITOR	CQMA472J50
	C24	MYLAR FILM CAPACITOR	CQMA332J50
	C25	MYLAR FILM CAPACITOR	CQMA103K50
	C26	ELECT. CAPACITOR	CEAS101M10
	C27	MYLAR FILM CAPACITOR	CQMA333K50
	C28, 3	ELECT. CAPACITOR	CEAS101M10
	C30	MYLAR FILM CAPACITOR	CQMA473J50
	C31, 32	CERAMIC CAPACITOR	CCCCH150J50
	C33	CERAMIC CAPACITOR	CKCYB152K50
	C34	ELECT. CAPACITOR	CEAS331M6R3
	C35	ELECT. CAPACITOR	CEAS330M16
	C36	MYLAR FILM CAPACITOR	CQMA103K50
	C37	ELECT. CAPACITOR	CEASR47M50
	C38	CERAMIC CAPACITOR	CKCYF103Z50
	C39	CERAMIC CAPACITOR	CCCCH330J50
	C4	ELECT. CAPACITOR	CEAS101M10
	C40	CERAMIC CAPACITOR	CKCYF103Z50
	C41−43	ELECT. CAPACITOR	CEAS330M16
	C44	ELECT. CAPACITOR	CEAS101M10
	C45	CERAMIC CAPACITOR	CKCYF103Z50
	C46, 47	CERAMIC CAPACITOR	CCCCH220J50
	C48, 49	CERAMIC CAPACITOR	CKCYF103Z50
	C5	CERAMIC CAPACITOR	CCCCH180J50
	C50, 51	CERAMIC CAPACITOR	CKCYF103Z50
	C52, 53	ELECT. CAPACITOR	CEAS470M16
	C54	ELECT. CAPACITOR	CEAS331M6R3
	C55	ELECT. CAPACITOR	CEAS221M10
	C56	CERAMIC CAPACITOR	CCCSL221J50
	C57, 58	ELECT. CAPACITOR	CEANP010M50
	C59	CERAMIC CAPACITOR	CCCSL221J50
	C6	MYLAR FILM CAPACITOR	CQMA104K50
	C60, 61	CERAMIC CAPACITOR	CCCSL221J50
	C62	ELECT. CAPACITOR	CEANP010M50
	C63	CERAMIC CAPACITOR	CCCSL221J50
	C64	ELECT. CAPACITOR	CEAS330M16
	C65	CERAMIC CAPACITOR	CKCYB471K50
	C66	CERAMIC CAPACITOR	CKCYF103Z50
	C67	CERAMIC CAPACITOR	CCCSL121J50
	C7	MYLAR FILM CAPACITOR	CQMA393K50

Mark	No.	Description	Parts No.
	C8	ELECT. CAPACITOR	CEAS330M16
	C86	CERAMIC CAPACITOR	CCCCH100D50
	C87	ELECT. CAPACITOR	CEAS330M16
	C88	CERAMIC CAPACITOR	CCCSL221J50
	C9	CERAMIC CAPACITOR	CKCYF103Z50
RESISTORS			
	VR1	VR (22k)	VRTB6VS223
	VR2	VR (1k)	VRTB6VS102
	VR3, 4	VR (22k)	VRTB6VS223
		Other resistors	RD1/6PM□□□J
OTHERS			
	CN101	CONNECTOR	5597−16APB
	CN107	5P TOP POST (NH)	B5P−SHF−1AA
	CN109	6P TOP POST	B6P−SHF−1AA
		MINI JACK 3P	DKN1028
	X1	XTAL RES (OSC) (16.9344MHz)	PSS1006
	X2	CRYSTAL RESONATOR (9.8304MHz)	DSS1010

DACB UNIT

SEMICONDUCTORS			
⚠	IC501, 502	REGULATOR IC	NJM7805FA
	IC512	LOGIC IC	TC74HCU04AP
	IC513	IC	SM5813AP
	IC522, 523	IC	SAA7350
	IC554, 555	OP−AMP IC	NJM5532DD
	IC615	OP−AMP IC	NJM5532DD
⚠	IC620, 621	IC PROTECTOR	ICP−N5
	Q521	TRANSISTOR	DTC124ES
	Q522, 523	TRANSISTOR	DTA124ES
	Q524, 525	TRANSISTOR	DTC124ES
	Q554−557	TRANSISTOR	2SC3068
	Q562, 563	TRANSISTOR	2SC3068
⚠	Q617	TRANSISTOR	2SB857
	Q618	TRANSISTOR	2SD755
⚠	Q619	POWER TRANSISTOR	2SD1133
	Q620	TRANSISTOR	2SD755
	Q621	TRANSISTOR	2SB715
⚠	Q622	TRANSISTOR	2SB857
	Q623	TRANSISTOR	2SB715
⚠	Q624	POWER TRANSISTOR	2SD1133
⚠	Q625	TRANSISTOR	2SA1283
⚠	Q626	TRANSISTOR	2SC3243
	D521	DIODE	1SS254
	D550, 551	DIODE	1SS254
	D570, 571	DIODE	1SS254
⚠	D620−627	DIODE	10DF2
	D628−631	ZENER DIODE	HZ5CLL
	D632	DIODE	10DF2

COILS

Mark	No.	Description	Parts No.
	L501–505	AMOLPHOUS BEAD	PTH1006
	L511, 512	AXIAL INDUCTOR	LAU010K
	L522, 523	AXIAL INDUCTOR	LAU010K
	L601–604	AMOLPHOUS BEAD	PTH1006

CAPACITORS

Mark	No.	Description	Parts No.
	C501, 502	AUDIO FILM CAPACITOR	CFTXA102J50
	C503, 504	AUDIO FILM CAPACITOR	CFTXA103J50
	C505	ELECT. CAPACITOR	CENA101M25
	C506–508	AUDIO FILM CAPACITOR	CFTXA103J50
	C510	AUDIO FILM CAPACITOR	CFTXA473J50
	C511–513	AUDIO FILM CAPACITOR	CFTXA103J50
	C514	AUDIO FILM CAPACITOR	CFTXA473J50
	C515	AUDIO FILM CAPACITOR	CFTXA102J50
	C516, 519	ELECT. CAPACITOR	CENA102M16
	C520	ELECT. CAPACITOR	CENA470M25
	C521	AUDIO FILM CAPACITOR	CFTXA473J50
	C522, 523	ELECT. CAPACITOR	CENA470M25
	C524, 525	AUDIO FILM CAPACITOR	CFTXA473J50
	C526, 527	ELECT. CAPACITOR	CENA470M25
	C528, 529	AUDIO FILM CAPACITOR	CFTXA473J50
	C530, 531	ELECT. CAPACITOR	CENA470M25
	C532, 533	AUDIO FILM CAPACITOR	CFTXA473J50
	C534, 535	ELECT. CAPACITOR	CENA470M25
	C536, 537	AUDIO FILM CAPACITOR	CFTXA473J50
	C538	ELECT. CAPACITOR	CENA470M25
	C539	AUDIO FILM CAPACITOR	CFTXA473J50
	C540	ELECT. CAPACITOR	CENA470M25
	C541	AUDIO FILM CAPACITOR	CFTXA473J50
	C542, 543	PL. STYRENE CAPACITOR	CQSF101J50
	C544, 545	ELECTR. CAPACITOR (470/50)	PCH1098
	C546, 547	AUDIO FILM CAPACITOR	CFTXA473J50
	C548–551	PL. STYRENE CAPACITOR	CQSF101J50
	C552–555	PL. STYRENE CAPACITOR	CQSF471J50
	C556, 557	PL. STYRENE CAPACITOR	CQSF101J50
	C558, 559	AUDIO FILM CAPACITOR	CFTXA473J50
	C560–563	PL. STYRENE CAPACITOR	CQSF220K50
	C564, 565	AUDIO FILM CAPACITOR	CFTXA681J50
	C566, 567	AUDIO FILM CAPACITOR	CFTXA562J50
	C568–571	ELECT. CAPACITOR	CENA471M50
	C572, 573	ELECT. CAPACITOR (47/50)	PCH1094
	C576, 577	AUDIO FILM CAPACITOR	CFTXA103J50
	C578, 579	ELECT. CAPACITOR	CENA471M35
	C580, 581	PL. STYRENE CAPACITOR	CQSF471J50
	C582, 583	AUDIO FILM CAPACITOR	CFTXA683J50
	C586	AUDIO FILM CAPACITOR	CFTXA473J50
	C587, 588	ELECT. CAPACITOR (220/35)	PCH1099
	C589, 590	PL. STYRENE CAPACITOR	CQSF471J50
	C591	ELECT. CAPACITOR	CENA470M25
	C592	AUDIO FILM CAPACITOR	CFTXA473J50
	C593	ELECT. CAPACITOR	CENA470M25
	C594	AUDIO FILM CAPACITOR	CFTXA473J50
	C596	AUDIO FILM CAPACITOR	CFTXA103J50
	C597	AUDIO FILM CAPACITOR	CFTXA104J50
	C598	AUDIO FILM CAPACITOR	CFTXA103J50
	C602, 603	ELECT. CAPACITOR	CENA470M25
	C604, 605	ELECT. CAPACITOR	CENA222M35
	C606, 607	ELECT. CAPACITOR	CENA102M35
	C608–615	AUDIO FILM CAPACITOR	CFTXA103J50
	C616	ELECT. CAPACITOR	CEAS471M25
	C620, 621	ELECT. CAPACITOR	CENA470M25
	C624, 625	AUDIO FILM CAPACITOR	CFTXA103J50

RESISTORS

Mark	No.	Description	Parts No.
	R540, 541	CARBON FILM RESISTOR	RDR1/4PM101J
	R542–545	CARBON FILM RESISTOR	RDR1/4PM303J
	R546–549	CARBON FILM RESISTOR	RDR1/4PM822J
	R550, 551	CARBON FILM RESISTOR	RDR1/4PM243J
	R552, 553	CARBON FILM RESISTOR	RDR1/4PM101J
	R556–559	CARBON FILM RESISTOR	RDR1/4PM303J
	R560–563	CARBON FILM RESISTOR	RDR1/4PM822J
	R564–567	CARBON FILM RESISTOR	RDR1/4PM562J
	R568, 569	CARBON FILM RESISTOR	RDR1/4PM751J
	R570	CARBON FILM RESISTOR	RDR1/4PM221J

Mark	No.	Description	Parts No.
	R571	CARBON FILM RESISTOR	RDR1/4PM105J
	R573	CARBON FILM RESISTOR	RDR1/4PM221J
	R574	CARBON FILM RESISTOR	RDR1/4PM105J
	R576, 577	CARBON FILM RESISTOR	RDR1/4PM162J
	R578	CARBON FILM RESISTOR	RDR1/4PM242J
	R579	CARBON FILM RESISTOR	RDR1/4PM122J
	R580	CARBON FILM RESISTOR	RDR1/4PM242J
	R581	CARBON FILM RESISTOR	RDR1/4PM122J
	R582, 583	CARBON FILM RESISTOR	RDR1/4PM223J
	R584, 585	CARBON FILM RESISTOR	RDR1/4PM471J
	R588, 589	CARBON FILM RESISTOR	RDR1/4PM271J
	R590, 591	CARBON FILM RESISTOR	RDR1/4PM511J
	R645, 646	CARBON FILM RESISTOR	RDR1/4PM132J
	R647, 648	METAL FILM RESISTER	RN1/4PQ3001F
	R649, 650	METAL FILM RESISTER	RN1/4PQ4301F
	R651, 652	CARBON FILM RESISTOR	RDR1/4PM4R7J
⚠	R653, 654	METAL OXIDE RESISTOR	RS1LMF4R7J
	R655, 656	CARBON FILM RESISTOR	RDR1/4PM472J
	R657, 658	CARBON FILM RESISTOR	RDR1/4PM682J
	R659, 660	CARBON FILM RESISTOR	RDR1/4PM512J
		Other resistors	RD1/6PM□□□J
OTHERS			
	SCREW	IBZ30P100FCC	
⚠	CN603	4P TOP POST (VH)	B4P−VH
	J	CONNECTOR ASSY	DKP2408
VCNB UNIT			
CAPACITORS			
	C12	CERAMIC CAPACITOR	CKPUYF223Z25
	C13	ELECTR. CAPACITOR	CEAL101M6R3
	C14−17	CERAMIC CAPACITOR	CKPUYF223Z25
VSLB UNIT			
SEMICONDUCTORS			
	D40−42	PHOTO INTERRUPTER	GP1A15
CAPACITORS			
	C40	CERAMIC CAPACITOR	CKPUYF223Z25

Mark	No.	Description	Parts No.
RESISTORS			
	R40−42	CARBON FILM RESISTOR	RD1/6PM271J
VSRB UNIT			
SEMICONDUCTORS			
	D43, 44	PHOTO INTERRUPTER	GP1A15
CAPACITORS			
	C41	CERAMIC CAPACITOR	CKPUYF223Z25
RESISTORS			
	R43, 44	CARBON FILM RESISTOR	RD1/6PM271J
SYPS UNIT			
COILS			
⚠	L601	FILTER	VTL−004
CAPACITORS			
⚠	C601−603	CAPACITOR (0.01/400)	VCG−048
OTHERS			
⚠	CN602	CONNECTOR	SD−5277−02A
CLSB UNIT			
SWITCHES			
	S6−8	PUSH SWITCH	DSG1015
VCHS UNIT			
SWITCH			
⚠	S601	VOLTAGE SELECTOR SW	DSX1010
OTHERS			
⚠	J606	CONNECTOR ASSY	DKP2401
KDSB UNIT			
SEMICONDUCTORS			
	IC300	IC	MC14489P
	D300	LED	LB−603VP
SWITCHES			
	S1−4	SWITCH	DSG1009
	S5	DIP SW 4P	DSX1004
CAPACITORS			
	C300−302	CERAMIC CAPACITOR	CKPUYF223Z25
RESISTORS			
	R300	CARBON FILM RESISTOR	RD1/6PM202J

ENCB UNIT

SEMICONDUCTORS

Mark	No.	Description	Parts No.
	IC500	PHOTO INTERRUPTER	GP1A30R

CAPACITORS

Mark	No.	Description	Parts No.
	C500	CERAMIC CAPACITOR	CKPUYF223Z25

RESISTORS

Mark	No.	Description	Parts No.
	R500	CARBON FILM RESISTOR	RD1/6PM131J

ILDB UNIT

SEMICONDUCTORS

Mark	No.	Description	Parts No.
	D400	LED	SLH−34VC3H3−S

RESISTORS

Mark	No.	Description	Parts No.
	R400	CARBON FILM RESISTOR	RD1/6PM221J

CNNB UNIT

CNNB unit has no service parts.

SWGB UNIT

SWITCHES

Mark	No.	Description	Parts No.
	C60, 61	CERAMIC CAPACITOR	CKPUYF223Z25

ANLG UNIT

SEMICONDUCTORS

Mark	No.	Description	Parts No.
	IC102, 103	OP−AMP IC	NJM5532SD
	IC105, 106	OP−AMP IC	NJM5532SD
	IC109	OP−AMP IC	NJM5532SD
	IC110−113	OP−AMP IC	NJM4556S
⚠	IC114	REGULATOR IC	NJM78M12FA
⚠	IC115	REGULATOR IC	NJM79M12FA
	Q105−110	TRANSISTOR	2SD2144S
	Q120−127	TRANSISTOR	2SD2144S
	Q128, 129	TRANSISTOR	2SC1740S
	Q130	TRANSISTOR	2SA933S
	D107−112	DIODE	1SS254
	D132−139	DIODE	1SS254
⚠	D140	DIODE	1SS254
	D141	ZENER DIODE	MTZ8. 2B

CAPACITORS

Mark	No.	Description	Parts No.
	C103, 106	ELECT. CAPACITOR	CEAS470M25
	C109	ELECT. CAPACITOR	CEAS470M25
	C110, 111	ELECT. CAPACITOR	CEANP470M25
	C112	ELECT. CAPACITOR	CEAS470M25
	C125−128	ELECT. CAPACITOR	CEANP470M25
	C137	ELECT. CAPACITOR	CEAS471M35
	C138, 139	CERAMIC CAPACITOR	CKCYF103Z50
	C140	ELECT. CAPACITOR	CEAS101M25
	C141	ELECT. CAPACITOR	CEAS471M35
	C142, 143	CERAMIC CAPACITOR	CKCYF103Z50
	C144	ELECT. CAPACITOR	CEAS101M25
	C148	CERAMIC CAPACITOR	CCCSL151J50
	C149	ELECT. CAPACITOR	CEAS101M25
	C150, 151	CERAMIC CAPACITOR	CCCSL151J50
	C152	ELECT. CAPACITOR	CEAS101M25
	C153, 154	CERAMIC CAPACITOR	CCCSL151J50
	C155	ELECT. CAPACITOR	CEAS101M25
	C156, 157	CERAMIC CAPACITOR	CCCSL151J50
	C158	ELECT. CAPACITOR	CEAS101M25
	C159, 160	CERAMIC CAPACITOR	CCCSL151J50
	C161	ELECT. CAPACITOR	CEAS101M25
	C162, 163	CERAMIC CAPACITOR	CCCSL151J50
	C164	ELECT. CAPACITOR	CEAS101M25
	C165, 166	CERAMIC CAPACITOR	CCCSL151J50
	C167	ELECT. CAPACITOR	CEAS101M25
	C168, 169	CERAMIC CAPACITOR	CCCSL151J50
	C170	ELECT. CAPACITOR	CEAS101M25
	C171	CERAMIC CAPACITOR	CCCSL151J50
	C172−190	ELECT. CAPACITOR	CEAS470M25
	C191	ELECT. CAPACITOR	CEAS471M35
	C192−195	MYLAR FILM CAPACITOR	CQMA102J50

RESISTORS

Mark	No.	Description	Parts No.
	R209−212	METALFILM RESISTOR	RN1/6PQ9101F
	R213−216	METALFILM RESISTOR	RN1/6PQ1002F
	R225−228	METALFILM RESISTOR	RN1/6PQ9101F
	R229	METALFILM RESISTOR	RN1/6PQ1002F
	R231, 232	METALFILM RESISTOR	RN1/6PQ1002F
	R234	METALFILM RESISTOR	RN1/6PQ1002F
	R241−244	METALFILM RESISTOR	RN1/6PQ9101F
	R245	METALFILM RESISTOR	RN1/6PQ1002F
	R247, 248	METALFILM RESISTOR	RN1/6PQ1002F
	R250	METALFILM RESISTOR	RN1/6PQ1002F
	R257−260	METALFILM RESISTOR	RN1/6PQ9101F
	R261	METALFILM RESISTOR	RN1/6PQ1002F
	R263, 264	METALFILM RESISTOR	RN1/6PQ1002F
	R266	METALFILM RESISTOR	RN1/6PQ1002F
		Other resistors	RD1/6PM□□□J

DGIF UNIT

SEMICONDUCTORS

Mark	No.	Description	Parts No.
	IC401, 402	DIGITAL I. F. IC	PD0037
	IC404	REGULATOR IC	NJM78M05FA
	IC405	LOGIC IC	TC74HC04AP
	IC406, 407	DIG−ATT IC	PD0026A
	Q401, 402	TRANSISTOR	DTC124ES
	Q403	TRANSISTOR	DTA124ES
	Q404, 405	TRANSISTOR	DTC124ES
	Q406, 407	TRANSISTOR	DTA124ES
	Q408	TRANSISTOR	DTC124ES
	Q409	TRANSISTOR	DTA124ES
	Q410	TRANSISTOR	DTC124ES
	Q411	TRANSISTOR	DTC124ES
	D402, 403	DIODE	1SS254
	D405, 406	DIODE	1SS254
	D407−414	DIODE	10DF2
	D415	BRIDGE STACK	S1VB10/F03
	D416	DIODE	1SS254
	D417	ZENER DIODE	MTZ4.7B
	D418	ZENER DIODE	MTZ3.9B

COILS

Mark	No.	Description	Parts No.
	L401−404	AXIAL INDUCTOR	LAU330J

CAPACITORS

Mark	No.	Description	Parts No.
	C401	ELECT. CAPACITOR	CEAS101M10
	C402	CERAMIC CAPACITOR	CKCYF472Z50
	C403	CERAMIC CAPACITOR	CKCYF103Z50
	C404	AUDIO FILM CAPACITOR	CFTXA224J50
	C405	ELECT. CAPACITOR	CEAS101M10
	C406	CERAMIC CAPACITOR	CKCYF472Z50
	C407	CERAMIC CAPACITOR	CCCSL220J50
	C408	CERAMIC CAPACITOR	CCCSL680J50
	C409	CERAMIC CAPACITOR	CKCYF472Z50
	C410, 411	ELECT. CAPACITOR	CEAS101M10
	C412	CERAMIC CAPACITOR	CKCYF472Z50
	C413	CERAMIC CAPACITOR	CCCSL220J50
	C414	ELECT. CAPACITOR	CEAS101M10
	C415	CERAMIC CAPACITOR	CKCYF472Z50
	C416	CERAMIC CAPACITOR	CKCYF103Z50
	C417	AUDIO FILM CAPACITOR	CFTXA224J50
	C418	ELECT. CAPACITOR	CEAS101M10
	C419	CERAMIC CAPACITOR	CKCYF472Z50
	C420	CERAMIC CAPACITOR	CCCSL220J50
	C421	CERAMIC CAPACITOR	CCCSL680J50
	C422	CERAMIC CAPACITOR	CKCYF472Z50
	C423, 424	ELECT. CAPACITOR	CEAS101M10
	C425	CERAMIC CAPACITOR	CKCYF472Z50
	C426	CERAMIC CAPACITOR	CCCSL220J50
	C427−432	CERAMIC CAPACITOR	CKCYF103Z50
	C433, 434	ELECT. CAPACITOR	CEAS222M35
	C435−437	CERAMIC CAPACITOR	CKCYF103Z50
	C438	ELECT. CAPACITOR	CEAS222M25
	C439, 440	CERAMIC CAPACITOR	CKCYF103Z50
	C441, 442	ELECT. CAPACITOR	CEAS101M10
	C443	ELECT. CAPACITOR	CEAS330M35
	C444	CERAMIC CAPACITOR	CKCYF103Z50
	C445, 446	CERAMIC CAPACITOR	CCCSL221J50
	C447, 448	CERAMIC CAPACITOR	CCCSL101J50

RESISTORS

Mark	No.	Description	Parts No.
		All resistors	RD1/6PM□□□J

OTHERS

Mark	No.	Description	Parts No.
	J411	CONNECTOR ASSY	DKP2383
	J412	CONNECTOR ASSY	DKP2382
	J415, 416	CONNECTOR ASSY	DKP2407

XLR1 UNIT

CAPACITORS

Mark	No.	Description	Parts No.
	C801−804	CERAMIC CAPACITOR	CKCYF103Z50

OTHERS

Mark	No.	Description	Parts No.
	CN801, 802	3P RECEPTACLE	PKP1004

XLR2 UNIT

CAPACITORS

Mark	No.	Description	Parts No.
	C805−808	CERAMIC CAPACITOR	CKCYF103Z50

OTHERS

Mark	No.	Description	Parts No.
	CN803, 804	3P RECEPTACLE	PKP1004

CNCT UNIT

SEMICONDUCTORS

Mark	No.	Description	Parts No.
	IC501	LINE DRIVER	M751701P
	IC502, 503	LOGIC IC	TC74HCU04AP

SWITCHES

Mark	No.	Description	Parts No.
	S501, 502	SWITCH	DSH−106

COILS

Mark	No.	Description	Parts No.
	F501−507	FILTER	VTH1001
	L501, 502	COIL	PTL1003

CAPACITORS

Mark	No.	Description	Parts No.
	C503, 504	ELECT. CAPACITOR	CEAS2R2M50
	C505, 506	CERAMIC CAPACITOR	CKCYF103Z50
	C507	CERAMIC CAPACITOR	CCCSL470J50
	C508, 509	CERAMIC CAPACITOR	CKCYF472Z50
	C510, 511	CERAMIC CAPACITOR	CKCYB471K50
	C512	CERAMIC CAPACITOR	CKCYF103Z50
	C513, 514	ELECT. CAPACITOR	CEAS101M10
	C515, 516	CERAMIC CAPACITOR	CKCYF103Z50
	C517	ELECT. CAPACITOR	CEAS470M25
	C518	ELECT. CAPACITOR	CEAS101M10
	C519, 520	CERAMIC CAPACITOR	CKCYF103Z50
	C521	ELECT. CAPACITOR	CEAS470M25

RESISTORS

Mark	No.	Description	Parts No.
	R502, 503	CARBON FILM RESISTOR	RD1/2PMF101J
		Other resistors	RD1/6PM□□□J

OTHERS

Mark	No.	Description	Parts No.
	JA503	D−SUB SOCKET 9P	DKN1051
	JA504	D−SUB SOCKET 15P	DKN1052
	JA505, 506	JACK	PKB1004

RSIF UNIT

SEMICONDUCTORS

Mark	No.	Description	Parts No.
	IC302	IC	M75175P
	IC303	LOGIC IC	SN75174N
	Q301	TRANSISTOR	DTA124ES

CAPACITORS

Mark	No.	Description	Parts No.
	C303	ELECT. CAPACITOR	CEAS101M10
	C304, 305	CERAMIC CAPACITOR	CKCYF103Z50
	C306	ELECT. CAPACITOR	CEAS101M10
	C307	CERAMIC CAPACITOR	CKCYF103Z50

RESISTORS

Mark	No.	Description	Parts No.
		All resistors	RD1/6PM□□□J

OTHERS

Mark	No.	Description	Parts No.
	J301	CONNECTOR ASSY	DKP1880

AUOB UNIT

CAPACITORS

Mark	No.	Description	Parts No.
	C702−706	CERAMIC CAPACITOR	CKCYF102Z50

RESISTORS

Mark	No.	Description	Parts No.
	R701−706	CARBON FILM RESISTOR	RD1/6PM101J

OTHERS

Mark	No.	Description	Parts No.
	JA701	JACK	DKB1025

BRAN UNIT

RESISTORS

Mark	No.	Description	Parts No.
	R101−103	CARBON FILM RESISTOR	RD1/6PM221J

CDPS UNIT

SEMICONDUCTOR

Mark	No.	Description	Parts No.
⚠	IC7	REGULATOR IC	NJM78M05FA

DISP UNIT

SEMICONDUCTORS

Mark	No.	Description	Parts No.
	Q90, 91	TRANSISTOR	2SC3243

COILS

Mark	No.	Description	Parts No.
	L90, 91	RADIAL INDUCTOR	LFA270K
	L92	INDUCTOR	DTH1120
	L93	TRANSFORMER	DTT1081

CAPACITORS

Mark	No.	Description	Parts No.
	C90, 91	ELECTR. CAPACITOR	CEAL470M16
	C92	PL. PROPYTENE CAPACIT	CQPYA333J2A
	C93	CAPACITOR (22p)	DCG1008

RESISTORS

Mark	No.	Description	Parts No.
	R90, 91	CARBON FILM RESISTOR	RD1/6PM472J

OTHERS

Mark	No.	Description	Parts No.
		INSULATION SHEET	DEC1471
		FL TERMINAL ASS'Y	DXB1386

9. ADJUSTMENTS

9.1 HORIZONTAL ADJUSTMENT OF THE TRANSFER BASE ASSEMBLY (Fig. 9−1)

1. Remove approximately 10 CDs from the bottom of the right and left rack assemblies.
2. Set the system to the Super Manual mode (see "11. ① Super Manual mode"), then move the transfer base assembly downwards.
3. Place a metal ruler on the left side Ⓐ of the D-stay (U). Adjust the height of the transfer base assembly to the D-stay (U).
4. Place the metal ruler on the right side Ⓑ of the D-stay (U). Modify the height of the transfer base assembly by adjusting the screw Ⓒ of the belt stopper (R). Height difference between the right and left transfer base assemblies must be within 0.1 mm.

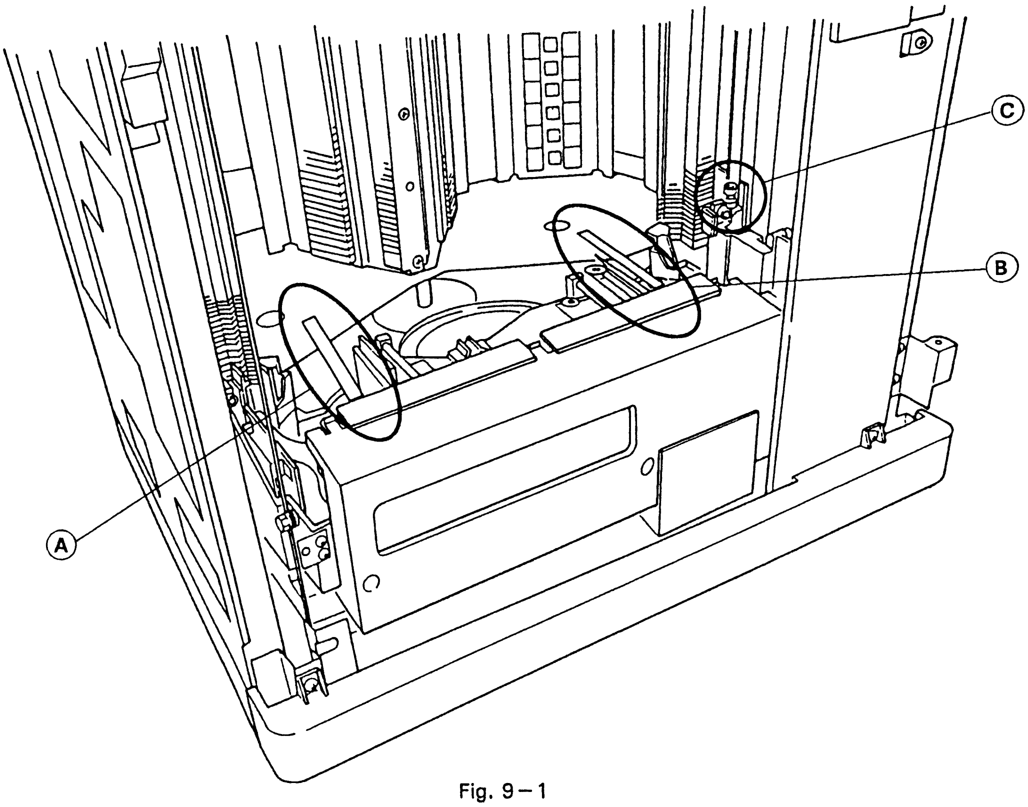


Fig. 9−1

9.2 ADJUSTING THE SPEED OF THE VD (VERTICAL) MOTOR

1. Make the connection as shown in Fig. 9−2.
2. Set the system to the Super Manual mode (see "11. ① Super Manual mode"), then turn all DIP switches (S5 on the KDSB unit) to OFF (VD motor will be selected).
3. Rotate the VD motor by pressing S1 or S2 of the KDSB unit.
4. Adjust VR1 so that the waveform of the oscilloscope becomes t = 17±0.5μsec (see Fig. 9−3).

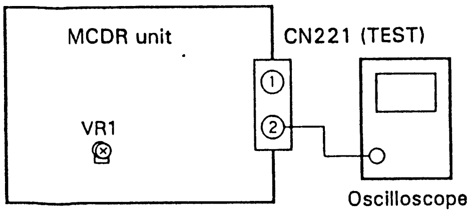


Fig. 9−2 Connection

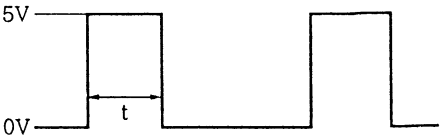


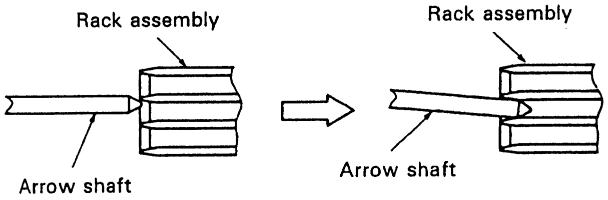
Fig. 9−3 Waveform

9.3 ADJUSTING THE HEIGHT OF THE ENCODER PLATE

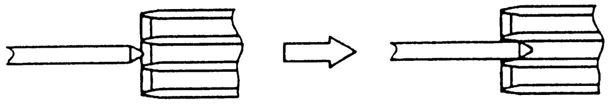
● Left Rack Assembly

1. Set the system to the Manual mode (see "11. ② Manual mode"), then move the transfer base assembly to the CD installation address #79.
2. Swing the assembly towards the left rack assembly.
3. Adjust the VD encoder 1 (left) so that the chuck stay, chuck 1 assembly and chuck spring 3 will be inoperative when the arrow shaft is activated. (See Fig. 9−4 and 9−5 and Table 9−1.)
4. After adjustment, move the transfer base assembly vertically and confirm the height at the address #79.
5. Repeat the same for confirming the height at the CD installation addresses #1, #12, #50 and #150.

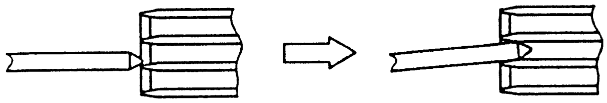
A : The VD encoder adjustment position is too high. (→ Lower the VD encoder plate.)



B : Proper adjustment



C : The VD encoder adjustment position is too low. (→ Raise the VD encoder plate.)



Adjust so that the arrow shaft and the rack assembly are positioned as shown in (B) above (see Fig. 9−5).

Fig. 9−4

● Right Rack Assembly

1. Make the adjustment in the same manner as with the left rack assembly, except that the CD installation address is #229.
2. Also confirm the height at the CD installation addresses #151, #200 and #300.

NOTE :
If the CD touches the partition of the rack assembly (A) even though the arrow shaft is in the center position, the chuck may defective, the arrow shaft may be bent or the disc is distorted.

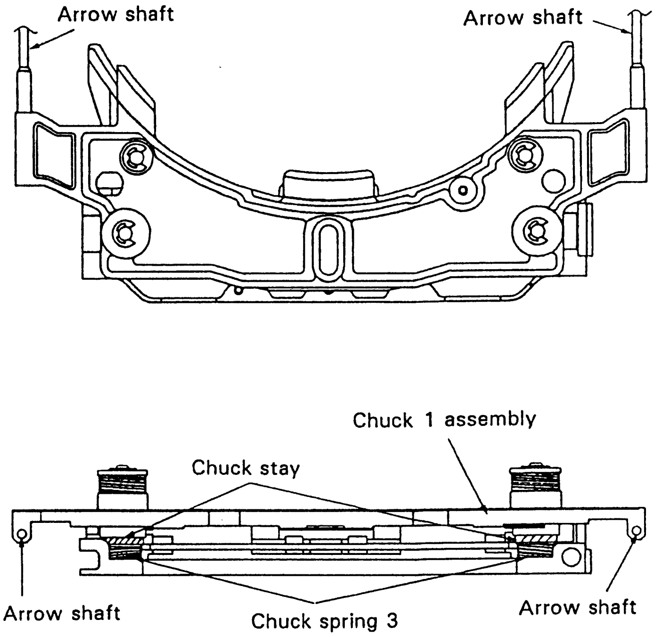


Fig. 9−5

The chuck stay and the chuck 1 assembly function as shown in the table below when the arrow shaft is inserted into the rack assembly.

	Chuck Stay	Chuck 1 Assembly	Chuck Spring 3
Fig. 9−4 A	Lowers.	Lowers.	Contracts.
Fig. 9−4 B	Does not operate.	Does not operate.	Does not operate.
Fig. 9−4 C	Does not operate.	Raises.	Does not operate.

Table 9−1

9.4 ADJUSTMENT OF THE CD PLAYER

CD players may operate improperly or do not operate at all if they are improperly or inadequately adjusted, even though no defect can be found in the pick-up and circuitry. Be sure to adjust correctly according to the adjustment procedure.

1. Adjustment Items / Check Points and Sequence

Sequence	Item	Test Point	Adjustment Point
1	Focus offset adjustment	CN109, Pin 6 (FOER)	VR2 (FO. OFS)
2	Grating adjustment	CN109, Pin 2 (TRER)	Grating adjusting slit
3	Tracking error balance adjustment	CN109, Pin 2 (TRER)	VR1 (TR. BAL)
4	Pick-up radial/tangential tilt adjustment	CN109, Pin 1 (RF)	Radial tilt adjusting screw, tangential tilt adjusting screw
5	RF level adjustment	CN109, Pin 1 (RF)	VR5 (RF level)
6	Focus servo loop gain adjustment	CN109, Pin 5 (FOIN) CN109, Pin 6 (FOER)	VR3 (FO. GAN)
7	Tracking servo loop gain adjustment	CN109, Pin 3 (TRIN) CN109, Pin 2 (TRER)	VR4 (TR. GAN)
8	Focus error signal confirmation	CN109, Pin 6 (FOER)	———

- Abbreviation Table

FOER : Focus Error
FOIN : Focus In
TRIN : Tracking In
TRER : Tracking Error

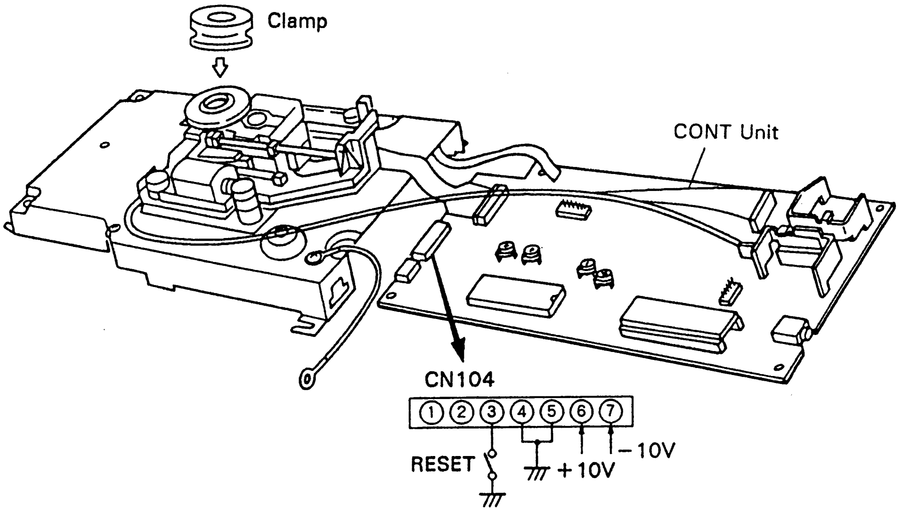
FO. OFS : Focus Offset
TR. BAL : Tracking Balance
FO. GAN : Focus Servo Loop Gain
TR. GAN : Tracking Servo Loop Gain

2. Instruments and Tools

Use the following instruments and tools for adjustment :

1. Dual trace oscilloscope (10 : 1 probe)
2. Low-frequency oscillator
3. Test disc (YEDS-7)
4. Low-pass filter (39 kΩ + 0.001 μF)
5. Resistor (100 kΩ)
6. Standard tools

3. CD Player Setting


Clamp
CONT Unit
CN104
① ② ③ ④ ⑤ ⑥ ⑦
RESET
+10V
−10V

4. Positions of the Test Points and Adjusting VR

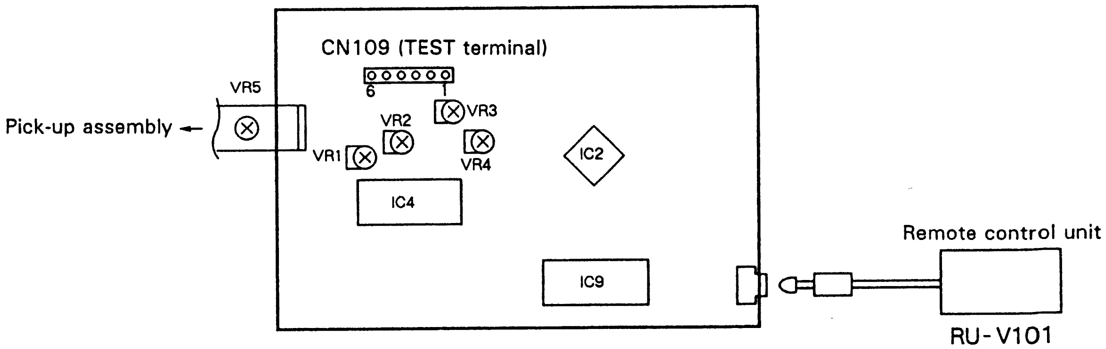

CN109 (TEST terminal)
6
1
VR5
Pick-up assembly
VR1
VR2
VR3
VR4
IC2
IC4
IC9
Remote control unit
RU-V101
CONT Unit

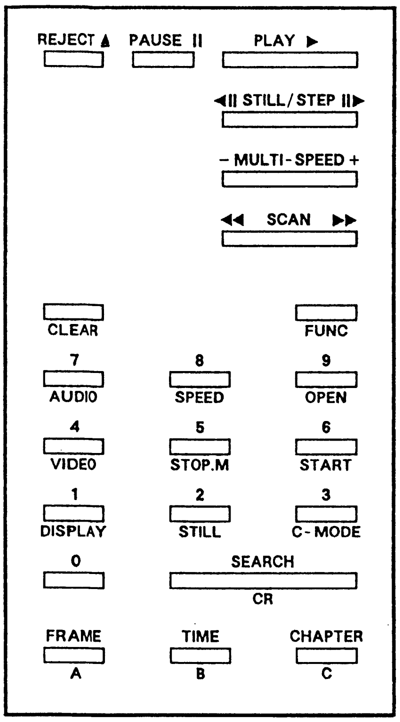
Fig. 1 Adjustment Points

5. Notes

1. Use an oscilloscope with a probe ratio of 10 : 1.
2. All control knob positions (set values) of the oscilloscope shown in this adjustment procedure are based on the condition using an oscilloscope with a probe ratio of 10 : 1.

● FUNCTION OF THE SERVICE REMOTE CONTROL UNIT

The CD player (PD-CACV3000) of the CD Auto Changer (CAC-V3000) can be directly operated by using the remote control unit (RU-V101). The remote control unit has the following functions :



RU-V101

REJECT		: Spindle stop
PAUSE		: Pause
PLAY		: Play
STILL/STEP ▮▮▶		: Disc select
STILL/STEP ◀▮▮		: Disc return
MULTI-SPEED +		: Test command
MULTI-SPEED −		:
SCAN ▶▶		: Scan FWD
SCAN ◀◀		: Scan REV
CLEAR		: Clear
FRAME		: Specifies a block.
TIME		: Specifies the time.
CHAPTER		: Specifies a track.
SEARCH		: Search
10 key		: To enter numbers.
DISPLAY	(FUNC + 1)	: No entry
STILL	(FUNC + 2)	: No entry
C-MODE	(FUNC + 3)	: No entry
VIDEO	(FUNC + 4)	: Volume set
STOP. M	(FUNC + 5)	: Stop marker
START	(FUNC + 6)	: Start
AUDIO	(FUNC + 7)	: Fade IN/OUT Start
SPEED	(FUNC + 8)	: Speed control
OPEN	(FUNC + 9)	: No entry
B	(FUNC + TIME)	: Fade time set

● Test Command

0 + MULTI-SPEED (+, −) key	: Laser diode (LD) ON
1 + MULTI-SPEED (+, −) key	: Focus servo close
2 + MULTI-SPEED (+, −) key	: Spindle kick
3 + MULTI-SPEED (+, −) key	: Tracking, slider servo ON
4 + MULTI-SPEED (+, −) key	: Slider FWD key — Pressing the Slider FWD key once will move the pickup by approximately half of the full stroke.
5 + MULTI-SPEED (+, −) key	: Slider REV key — Pressing the Slider REV key once will move the pickup by approximately half of the full stroke.
6 + MULTI-SPEED (+, −) key	: Tracking, slider servo OFF
7 + MULTI-SPEED (+, −) key	: Slider stop, spindle stop
8 + MULTI-SPEED (+, −) key	:
9 + MULTI-SPEED (+, −) key	: Focus servo open

● Usage of the SPEED Command

Based on the assumption that normal speed equals 100, the speed rate of 90 to 110 is expressed as −10 to +10%.

Example : Changing the speed by −10%

$\boxed{9} + \boxed{0} + \boxed{\text{FUNC}} + \boxed{8}$

Note :

- *The changed speed will not return to normal by pressing the REJECT button. To resume normal speed, press the Disc Select key.*
- *Always press the Disc Select key after pressing the Disc Return key. Otherwise the system will not accept commands.*

● To Check the Digital Attenuator

Attenuation level and Fade time are able to set. Fade In/Out function is also excuted by this remote controler.

Example 1 : Set the fade time to 10 seconds.

$\boxed{1} + \boxed{0} + \boxed{\text{FUNC}} + \boxed{\text{TIME}}$

Example 2 : Attenuation level maximum. (mute)

$\boxed{0} + \boxed{\text{FUNC}} + \boxed{4}$

Example 3 : Start the Fade-in.

$\boxed{2} + \boxed{5} + \boxed{5} + \boxed{\text{FUNC}} + \boxed{7}$

Note :

The digital attenuation is valid for the built-in D/A convertor. So use the analog output to check this function.

1. Focus Offset Adjustment

- Purpose : To adjust the DC offset voltage of the focus error amplifier to −50mV.

- Symptom of improper adjustment : The player does not focus in. RF signal is dirty.

● Instrument connection	● Connect the oscilloscope to Pin 6 (FOER) of CN109.
● Setting	● 5mV/div, 10mS/div, DC mode
● Player condition	● Stop (only the power supply is ON)
● Adjustment point	● VR2 (FO. OFS)
● Disc	● Not necessary

- Connection

- Procedure

Adjust VR2 (FO. OFS) to set the voltage of Pin 6 (FOER) of CN109 to −50 ±50mV.

2. Grating Adjustment

- Purpose : To adjust the two laser beam spots for tracking error generation to the optimum angle on the track.
- Symptom of improper adjustment : The player does not start playback. Does not perform track search. Skips track(s).

● Instrument connection	● Connect the oscilloscope to Pin 2 (TRER) of CN109 via the low-pass filter. (see Fig. 2)
● Setting	● 50 mV/div, 5 mS/div, DC mode
● Player condition	● Focus and spindle servos closed. Tracking servo open.
● Adjustment point	● Grating adjusting slit of the pickup.
● Disc	● YEDS-7

- Connection

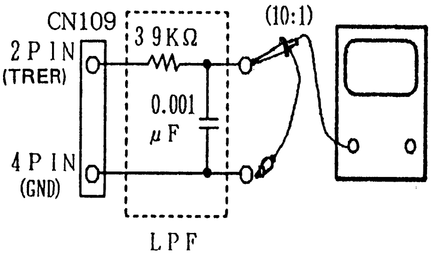
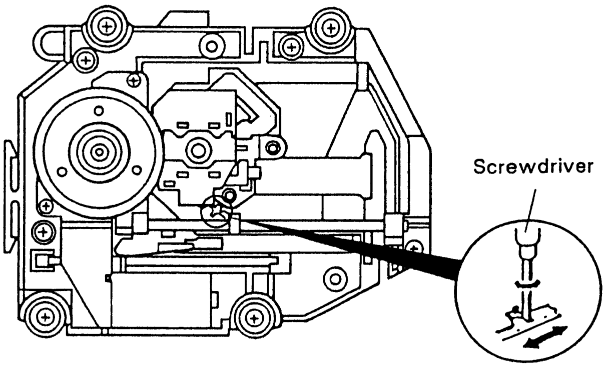


Fig. 2



Adjustment Point

- Procedure

1. Move the pickup to the proximity of the outer edge of the disc by using the "4 + MULTI-SPEED" or "5 + MULTI-SPEED" key.
2. Press the "1 + MULTI-SPEED" key, then "2 + MULTI-SPEED" key to close the focus and spindle servos.
3. Insert a screwdriver into the grating adjusting slit. Adjust grating and find the null point. See the next page for more details.
4. Slowly turning the screwdriver counterclockwise from the null point will gradually increase the amplitude of the waveform. Continued turning of the screwdriver will decrease the waveform amplitude again.
   Turn the screwdriver counterclockwise from the null point to find the first maximum point of waveform amplitude.

(Reference)
Fig. 3 shows the relationship between the tracking beam angle to the track and the waveform.

- How to find the null point

Insert a screwdriver into the grating adjusting slit and change the grating angle. By this method, the tracking error signal amplitude of Pin 2 of CN109 can be changed. There are several points where the waveform amplitude decreases within the variable range of grating. Among these points, only one point allows the envelope to be smooth. This means that the three laser beams divided by the grating are on the same track (see Fig. 3). This point is called null point. Adjust the grating to find the null point and use it as the reference position for grating adjustment.

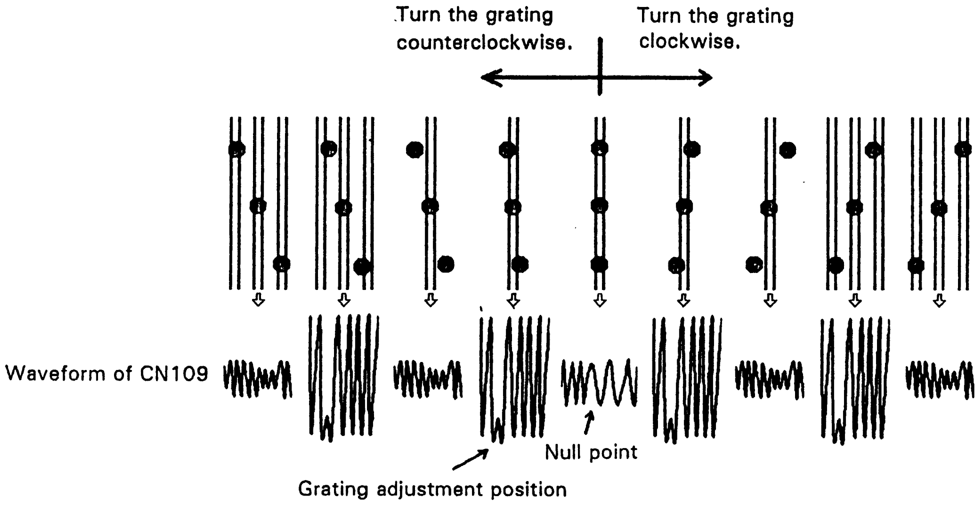
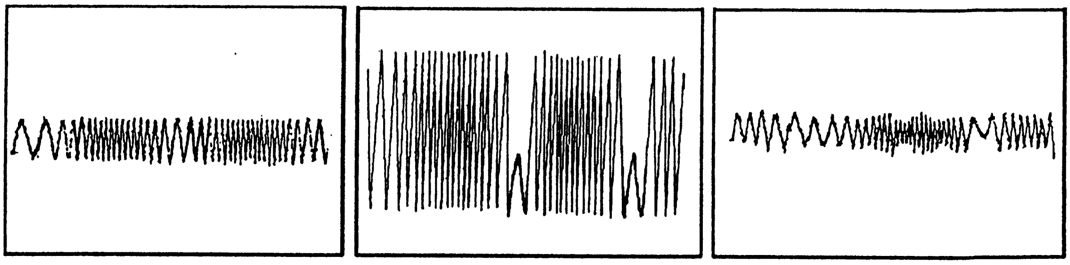

Turn the grating counterclockwise.
Turn the grating clockwise.
Waveform of CN109
Null point
Grating adjustment position

Fig. 3



Note :

The amplitude of the tracking error signal is approximately 3 Vp-p. If the amplitude is extremely small (2 Vp-p) (using LPF of 39 kΩ + 0.001 μF), the lens may be not clean or the pickup is mulfunctioning.

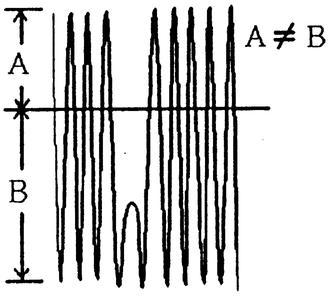
If the amplitude of the error signal fluctuates more than 10% between the inner most edge and outer most edge of a disc, the grating is not adjusted to the optimum point. Adjust the grating correctly.

3. Tracking Error Balance Adjustment

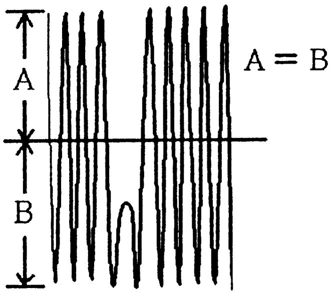
- Purpose : To correct the sensitivity levels of the tracking photodiode to the same level.
- Symptom of improper adjustment : The player does not start playback. Does not perform track search.

● Instrument connection	● Connect the oscilloscope to Pin 2 (TRER) of CN109 (the low-pass filter may be used).
● Setting	● 50 mV/div, 5 mS/div, DC mode
● Player condition	● Focus and spindle servos closed. Tracking servo open.
● Adjustment point	● VR1 (TR. BAL)
● Disc	● YEDS-7

- Connection



With direct current component



Without direct current component

- Procedure

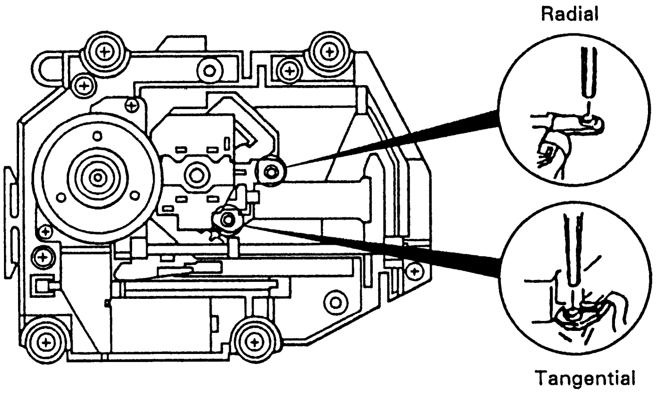
1. Move the pickup to the center between the inner and outer edges of the disc (R = 35 mm) by using the "4 + MULTI-SPEED" or "5 + MULTI-SPEED" key.
2. Press the "1 + MULTI-SPEED" key, then "2 + MULTI-SPEED" key to close the focus and spindle servos.
3. Align the bright line (GND) of the oscilloscope with the center of the oscilloscope screen, and change to the DC mode.
4. Adjust VR1 (TR. BAL) to make the amplitude of the positive side the same as the negative side of the tracking error signal of Pin 2 (TRER) of CN109 (so that there is no DC component).

4. Pick-up Radial/Tangential Tilt Adjustment

- Purpose : To adjust the angle of the pickup to the disc, and optimize the RF signal to be read by irradiating the laser beam vertically to the disc.
- Symptom of improper adjustment : Skipping sound. Some discs cannot be played back.

● Instrument connection	● Connect the oscilloscope to Pin 1 (RF) of CN109.
● Setting	● 20 mV/div, 200 nS/div, AC mode
● Player condition	● Play
● Adjustment point	● The radial tilt adjusting screw and the tangential tilt adjusting screw of the pickup.
● Disc	● YEDS-7

- Connection



Adjustment Point

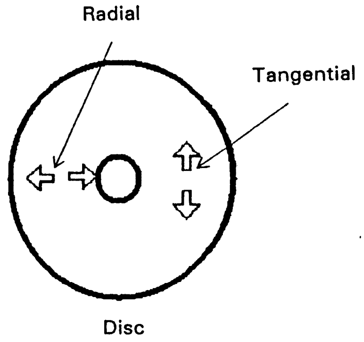


Fig. 4

- Procedure

1. Move the pickup to the proximity of the outer edge of the disc by using the "4 + MULTI-SPEED" key. Press the "1 + MULTI-SPEED", "2 + MULTI-SPEED" and "3 + MULTI-SPEED" keys in sequence to close the focus, spindle and tracking servos and set the player to the play mode.
2. Use a hexagon wrench (3 mm) to adjust the radial tilt adjusting screw so that the eye pattern (diamond-shaped waveform that appears in the center of the RF signal) is shown most clearly.
3. Use the hexagon wrench to adjust the tangential tilt adjusting screw so that the eye pattern is shown most clearly (see Fig. 5).
4. Adjust again the radial tilt adjusting screw, then the tangential tilt adjusting screw so that the eye pattern is shown most clearly. If necessary, adjust the two adjusting screws alternately so that the eye pattern is shown most clearly.

Note :
Radial and tangential refer to the directions in relation to the discs, as shown in Fig. 4.

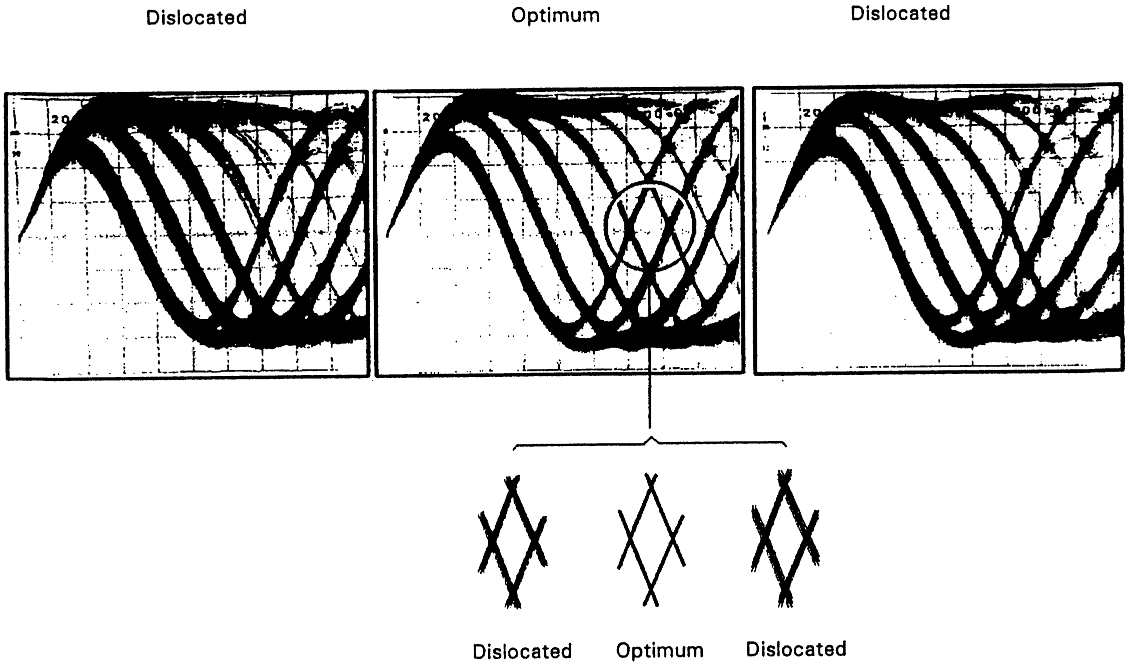

Dislocated
Optimum
Dislocated
Dislocated
Optimum
Dislocated

Fig. 5

5. RF Level Adjustment

- Purpose : To optimize the amplitude of the playback RF signal.
- Symptom of improper adjustment : The player does not play back. Does not perform search.

Instrument connection	Connect the oscilloscope to Pin 1 (RF) of CN109.
Setting	50 mV/div, 10 mS/div, AC mode
Player condition	Play
Adjustment point	VR5 (laser power)
Disc	YEDS-7

- Connection

- Procedure

1. Move the pickup to the center between the inner and outer edges of the disc (R = 35 mm) by using the "4 + MULTI-SPEED" or "5 + MULTI-SPEED" key. Press the "1 + MULTI-SPEED", "2 + MULTI-SPEED" and "3 + MULTI-SPEED" keys in sequence to close the servos and set the player to the play mode.
2. Adjust VR5 to set the amplitude of the RF signal to 1.2 Vp-p +0.3/−0.1 V.

6. Focus Servo Loop Gain Adjustment

- Purpose : To adjust the loop gain of the focus servo to the optimum value.

- Symptom of improper adjustment : The player does not start playback. The focus actuator sound is high.

• Instrument connection	• See Fig. 6.
• Setting	• CH1 : 20 mV/div, X−Y mode CH2 : 5 mV/div
• Player condition	• Play
• Adjustment point	• VR3 (FO. GAN)
• Disc	• YEDS-7

- Connection

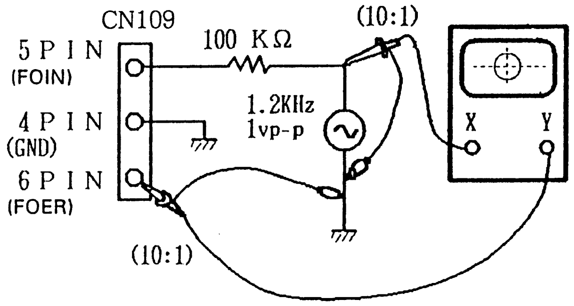
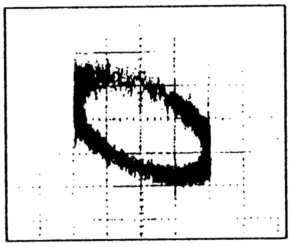
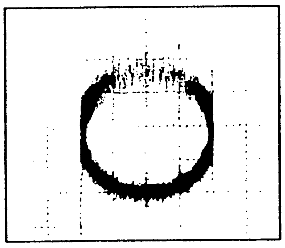


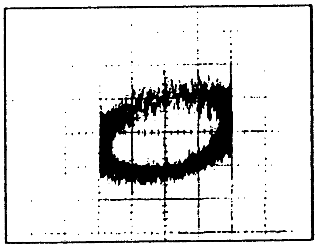
Fig. 6



Gain is too large.



Optimum gain



Gain is too small.

- Procedure

1. Set the output of the AF oscillator to 1.2 kHz and 1 Vp-p.
2. Move the pickup to the center between the inner and outer edges of the disc (R = 35 mm) by using the "4 + MULTI-SPEED" or "5 + MULTI-SPEED" key. Press the "1 + MULTI-SPEED", "2 + MULTI-SPEED" and "3 + MULTI-SPEED" keys in sequence to close the servos and set the player to the play mode.
3. Adjust VR3 (FO. GAN) so that the Lissajous's waveforms become symmetric to the X and Y axes, respectively.

7. Tracking Servo Loop Gain Adjustment

- Purpose : To adjust the loop gain of the tracking servo to the optimum value.

- Symptom of improper adjustment : The player does not start playback. The actuator sound is high during searching. Skips track(s).

Instrument connection	See Fig. 7.
Setting	CH1 : 50 mV/div, X−Y mode CH2 : 5 mV/div
Player condition	Play
Adjustment point	VR4 (TR. GAN)
Disc	YEDS−7

- Connection

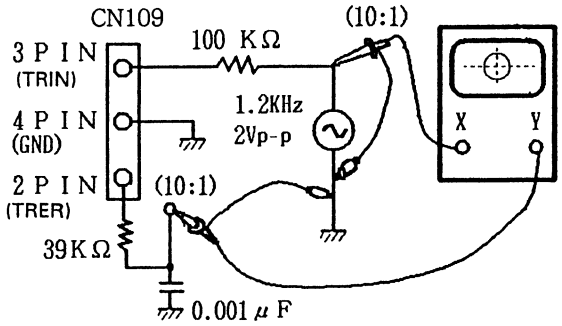
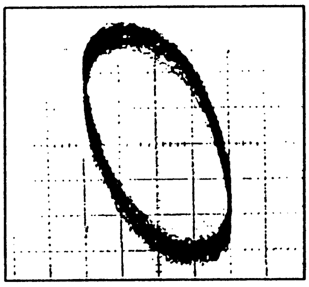
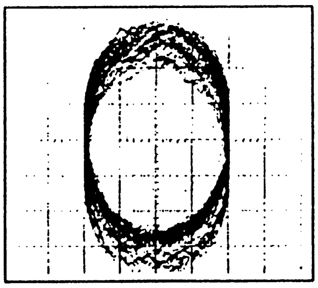


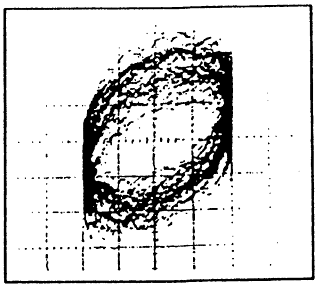
Fig. 7



Gain is too large.



Optimum gain



Gain is too small.

- Procedure

1. Set output of the AF oscillator to 1.2 kHz and 2 Vp−p.
2. Move the pickup to the center between the inner and outer edges of the disc (R = 35 mm) by using the "4 + MULTI-SPEED" or "5 + MULTI-SPEED" key. Press the "1 + MULTI-SPEED", "2 + MULTI-SPEED" and "3 + MULTI-SPEED" keys in sequence to close the servos and set the player to the play mode.
3. Adjust VR4 (TR. GAN) so that the Lissajous's waveforms become symmetric to the X and Y axes, respectively.

8. Focus Error Signal Confirmation

- Purpose : To evaluate the pickup by observing the focus error signal. Whether the pickup is faulty or not faulty can be decided from the level of amplitude of the tracking error signal (see "Tracking error balance adjustment") and by confirming the waveform of the focus error signal.

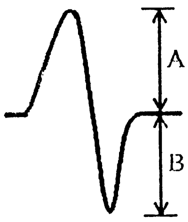
- Symptom of improper adjustment :

● Instrument connection	● Connect the oscilloscope to Pin 6 (FOER) of CN109.
● Setting	● 100 mV/div, 5 mS/div, DC mode
● Player condition	● Stop
● Adjustment point	● None
● Disc	● YEDS-7

- Connection

- Procedure

1. Connect Pin 5 of CN109 to GND.
2. Insert a disc.
3. Pressing the "1 + MULTI-SPEED" key while watching the oscilloscope screen allows you to observe for an instant the waveform shown in Fig. 8. Confirm that the amplitude is 2.5 Vp-p or larger and the amplitude of the positive side is approximately the same as the negative side. Note that the waveform is displayed only for an instant when the "1 + MULTI-SPEED" key is pressed. Press the key as many times as needed until the waveform can be confirmed.



A = B
A + B ≧ 2.5 Vp-p

Fig. 8

[Evaluation of the pickup]
Evaluate the pickup after all adjustments are made correctly. If the evaluation result is as listed below, the pickup may be defective.

① The amplitude of the tracking error signal is extremely small (2 Vp-p or smaller).
② The amplitude of the focus error signal is extremely small (2.5 Vp-p or smaller).
③ The amplitude of the positive side of the focus error signal is excessively asymmetric from the negative side (more than 2 : 1).
④ RF signal is too small (0.8 Vp-p or smaller). The signal does not reach the specified value even after adjusting VR 5 (laser power).

9. REGLAGES

9.1 REGLAGE HORIZONTAL DE L'ENSEMBLE DE BASE DE TRANSFERT (Fig. 9−1)

1. Retirer environ 10 CD du bas des ensembles de support droit et gauche.
2. Régler le système au mode Super Manuel (voir "11. ① Mode Super Manuel"), puis abaisser l'ensemble de base de transfert.
3. Placer une règle métallique sur le côté gauche Ⓐ de l'armature en forme de D (U). Régler la hauteur de l'ensemble de base de transfert d'après l'armature en forme de D (U).
4. Placer la règle métallique sur le côté droit Ⓑ de l'armature en forme de D (U). Modifier la hauteur de l'ensemble de base de transfert en ajustant la vis Ⓒ de la butée de courroie (R). La différence de hauteur entre les ensembles de base de transfert droit et gauche doit être dans les 0,1 mm.

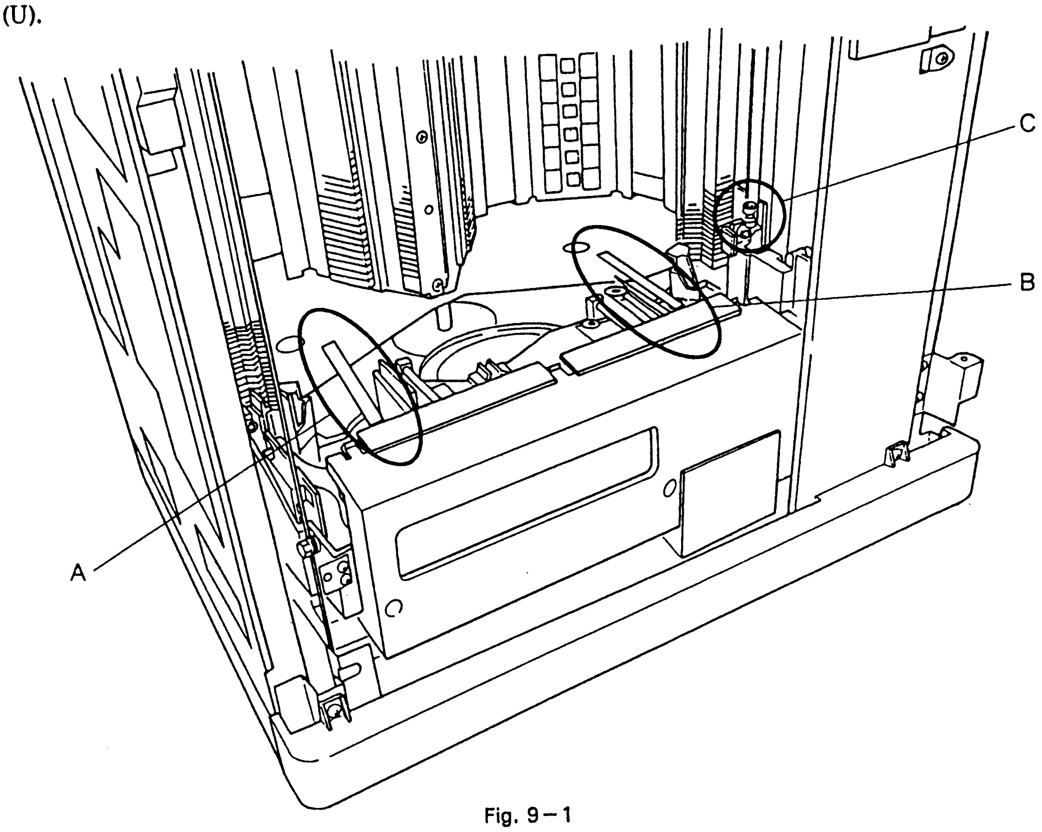


Fig. 9−1

9.2 REGLAGE DE LA VITESSE DU MOTEUR VD (VERTICAL)

1. Procéder à la connexion de la manière indiquée à la Fig. 9−2.
2. Régler le système au mode Super Manuel (voir "11. ① Mode Super Manuel"), puis désenclencher tous les commutateurs DIP (S5 l'unité KDSB) (le moteur VD sera sélectionné).
3. Faire tourner le moteur VD en mainten ant S1 ou S2 de l'unité KDSB enfoncé.
4. Ajuster VR1 pour que la forme d'onde de l'oscilloscope devienne t = 17 ±0,5 μsec. (voir Fig. 9−3).

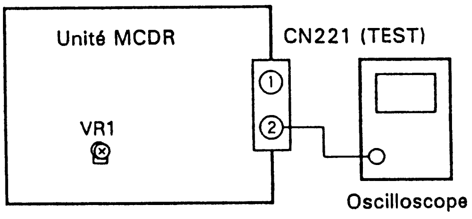
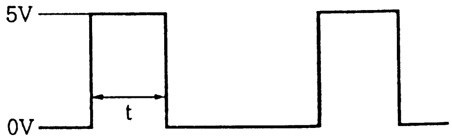


Fig. 9−2 Connexion



t = 17±0,5μsec.

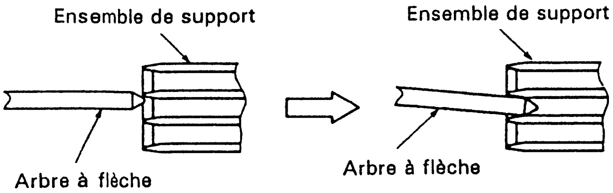
Fig. 9−3 Forme d'onde

9.3 REGLAGE DE LA HAUTEUR DE LA PLAQUE D'ENCODEUR VD

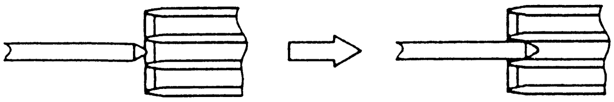
● Ensemble de Support Gauche

1. Régler le système au mode Manuel (voir "11. ② Mode Manuel"), puis déplacer l'ensemble de base de transfert à l'adresse d'installation de CD #79.
2. Faire basculer l'ensemble vers l'ensemble de support gauche.
3. Ajuster l'encodeur VD 1 (gauche) pour que l'armature à mandrin, l'ensemble 1 de mandrin et le ressort de mandrin 3 ne soient pas fonctionnels lorsque l'arbre à flèche est activé. (Voir les Fig. 9−4 et 9−5 et le Tableau 9−1.)
4. Après le réglage, déplacer verticalement l'ensemble de base de transfert et confirmer la hauteur au niveau de l'adresse #79.
5. Répéter la même procédure pour confirmer la hauteur au niveau des adresses d'installation de CD #1, #12, #50 et #150.

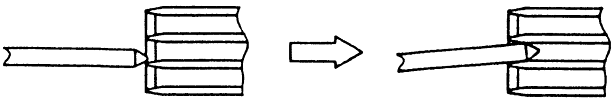
A : La position de réglage de l'encodeur VD est trop élevée. (→ Abaisser la plaque de l'encodeur VD.)



B : Réglage correct



C : La position de réglage de l'encodeur VD est trop basse. (→ Relever la plaque de l'encodeur VD.)



Ajuster pour que l'arbre à flèche et l'ensemble de support soient placés de la manière indiquée dans (B) ci-dessus (voir Fig. 9−5).

Fig. 9−4

● Ensemble de Support Droit

1. Procéder au réglage de la même manière qu'avec l'ensemble de support gauche, sauf que l'adresse d'installation de CD est #229.
2. Confirmer également la hauteur au niveau des adresses d'installation de CD #151, #200 et #300.

REMARQUE :
Si le CD touche la partie de l'ensemble de support (A), même avec l'arbre à flèche en position centrale, le mandrin peut être défectueux, l'arbre à flèche tordu ou le disque déformé.

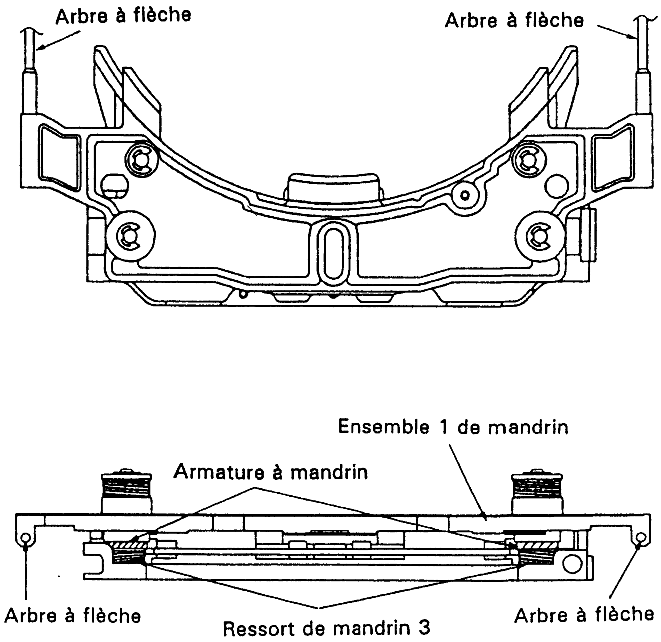


Fig. 9−5

L'armature à mandrin et l'ensemble 1 de mandrin fonctionnent de la manière indiquée dans le tableau ci-dessous lorsque l'arbre à flèche est inséré dans l'ensemble de support.

	Armature à Mandrin	Ensemble 1 de Mandrin	Ressort de Mandrin 3
Fig. 9−4 A	Abaisse.	Abaisse.	Contracte.
Fig. 9−4 B	Ne fonctionne pas.	Ne fonctionne pas.	Ne fonctionne pas.
Fig. 9−4 C	Ne fonctionne pas.	Relève.	Ne fonctionne pas.

Tableau 9−1

9.4 REGLAGE DU LECTEUR DE CD

Les lecteurs de CD peuvent mal fonctionner ou ne pas fonctionner du tout s'ils sont mal ou incorrectement ajustés, bien qu'aucun défaut ne puisse être trouvé dans le capteur et les circuits électriques. Toujours ajuster correctement en fonction de la procédure d'ajustement.

1. Articles de Réglage/Points de Contrôle et Séquence

Séquence	Article	Point d'essai	Point de réglage
1	Réglage du décalage de mise au point	CN109, Broche 6 (FOER)	VR2 (FO. OFS)
2	Réglage de la grille	CN109, Broche 2 (TRER)	Fente de réglage de la grille
3	Réglage de l'équilibre d'erreur d'alignement	CN109, Broche 2 (TRER)	VR1 (TR. BAL)
4	Réglage de l'inclinaison radiale/tangentielle du capteur	CN109, Broche 1 (RF)	Vis de réglage d'inclinaison radiale, vis de réglage d'inclinaison tangentielle
5	Réglage du niveau HF	CN109, Broche 1 (RF)	VR5 (niveau HF)
6	Réglage du gain de boucle du servo de mise au point	CN109, Broche 5 (FOIN) CN109, Broche 6 (FOER)	VR3 (FO. GAN)
7	Réglage du gain de boucle du servo d'alignement	CN109, Broche 3 (TRIN) CN109, Broche 2 (TRER)	VR4 (TR. GAN)
8	Confirmation du signal d'erreur de mise au point	CN109, Broche 6 (FOER)	———

● Table des abréviations

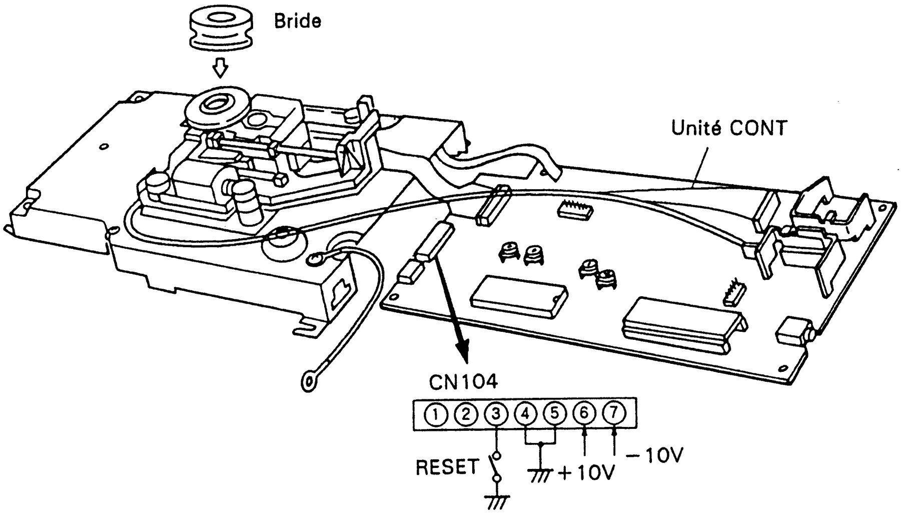
FOER : Erreur de Mise au Point
FOIN : Entrée Mise au Point
TRIN : Entrée Alignement
TRER : Erreur D'alignement
FO. OFS : Décalage de Mise au Point
TR. BAL : Equilibre D'alignement
FO. GAN : Gain de Boucle Servo de Mise au Point
TR. GAN : Gain de Boucle Servo D'alignement

2. Instruments et Outils

Utiliser les instruments et outils suivants pour le réglage.

1. Oscilloscope à double tracé (sonde 10 : 1)
2. Oscilloscope à basse fréquence
3. Disque d'essai (YEDS-7)
4. Filtre passe-bas (39 kΩ + 0,001 μF)
5. Résistance (100 kΩ)
6. Outils standard

3. Réglage du Lecteur de CD


Bride
Unité CONT
CN104
①②③④⑤⑥⑦
RESET
+10V
−10V

4. Positions des Points D'essai et Réglage de VR

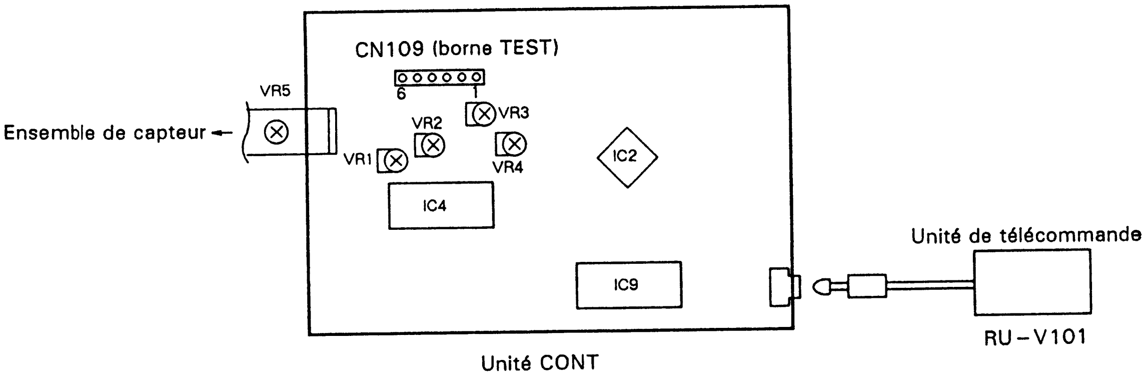

CN109 (borne TEST)
6
1
VR5
Ensemble de capteur
VR3
VR2
VR1
VR4
IC2
IC4
IC9
Unité de télécommande
RU−V101
Unité CONT

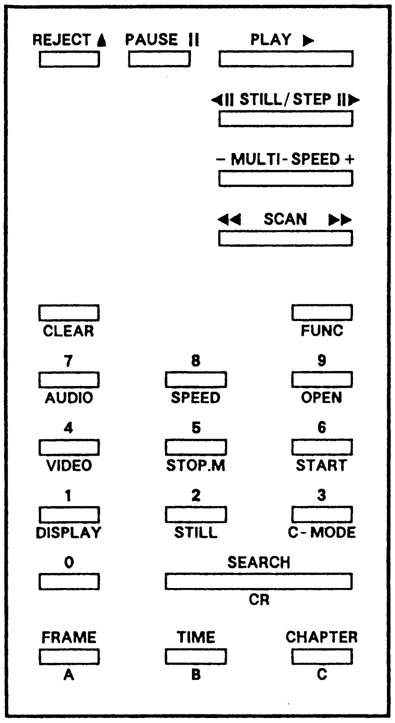
Fig. 1 Points de réglage

5. Remarques

1. Utiliser un oscilloscope ayant un rapport de sonde de 10 : 1.
2. Toutes les positions du bouton de commande (valeurs réglées) de l'oscilloscope indiquées dans cette procédure de réglage sont basées sur les conditions d'utilisation d'un oscilloscope ayant un rapport de sonde de 10 : 1.

● FONCTIONS DE L'UNITÉ DE TÉLÉCOMMANDE DE SERVICE

Le lecteur de CD (PD-CACV3000) du changeur automatique de CD (CAC-V3000) peut être directement actionné en utilisant l'unité de télécommande (RU-V101). L'unité de télécommande possède les fonctions suivantes :



RU-V101

REJECT		: Arrêt de l'axe
PAUSE		: Pause
PLAY		: Reproduction
STILL/SEPT II▶		: Sélection de disque
STILL/SEPT ◀II		: Retour de disque
MULTI-SPEED +		: Commande d'essai
MULTI-SPEED −		:
SCAN ▶▶		: Balayage en avant
SCAN ◀◀		: Balayage en arrière
CLEAR		: Effacement
FRAME		: Spécifie un bloc.
TIME		: Spécifie l'heure.
CHAPTER		: Spécifie une piste.
SEARCH		: Recherche
10 key		: Pour entrer des chiffres.
DISPLAY	(FUNC + 1)	: Pas d'entrée
STILL	(FUNC + 2)	: Pas d'entrée
C-MODE	(FUNC + 3)	: Pas d'entrée
VIDEO	(FUNC + 4)	: Réglage du volume
STOP. M	(FUNC + 5)	: Marqueur d'arrêt
START	(FUNC + 6)	: Démarrage
AUDIO	(FUNC + 7)	: Lacement du fondu de début et de fin
SPEED	(FUNC + 8)	: Contrôle de vitesse
OPEN	(FUNC + 9)	: Pas d'entrée
B	(FUNC + TIME)	: Réglage de la durée du fondu

● Commande D'essai

Touche 0 + MULTI-SPEED (+, −)	: Diode laser (LD) allumée
Touche 1 + MULTI-SPEED (+, −)	: Fermeture de servo de mise au point
Touche 2 + MULTI-SPEED (+, −)	: Secousse d'axe
Touche 3 + MULTI-SPEED (+, −)	: Alignement, servo curseur activé
Touche 4 + MULTI-SPEED (+, −)	: Une pression sur la touche d'avance de curseur déplace le capteur d'environ la moitié de la pleine course.
Touche 5 + MULTI-SPEED (+, −)	: Une pression sur la touche de recul de curseur déplace le capteur d'environ la moitié de la pleine course.
Touche 6 + MULTI-SPEED (+, −)	: Alignement, servo curseur désactivé
Touche 7 + MULTI-SPEED (+, −)	: Arrêt de curseur, arrêt d'axe
Touche 8 + MULTI-SPEED (+, −)	:
Touche 9 + MULTI-SPEED (+, −)	: Ouverture de servo de mise au point

● Utilisation de la Commande SPEED

En se basant sur la supposition que la vitesse normale est égale à 100, le rapport de vitesse de 90 à 110 est exprimé avec −10% à +10%.

Exemple : Changement de la vitesse de −10%

$\boxed{9} + \boxed{0} + \boxed{\text{FUNC}} + \boxed{8}$

Remarque :

- *La vitesse changée ne revient pas à la normale en appuyant sur la touche REJECT. Pour revenir à la vitesse normale, appuyer sur la touche de sélection de disque.*
- *Toujours appuyer sur la touche de sélection de disque après une pression sur la touche de retour de disque. Sinon, le système n'accepte pas les commandes.*

● Contrôle de L'atténuateur de Signal

Le niveau d'atténuation et la durée de fondu peuvent être réglés. La fonction de fondu peut également être commadée à l'aide de cette télécommande.

Exemple 1 : Règle la durée de fondu à 10 secondes.

$\boxed{1} + \boxed{0} + \boxed{\text{FUNC}} + \boxed{\text{TIME}}$

Exemple 2 : Niveau d'atténuation maximal. (sourdine)

$\boxed{0} + \boxed{\text{FUNC}} + \boxed{4}$

Exemple 3 : Lance le fondu de début.

$\boxed{2} + \boxed{5} + \boxed{5} + \boxed{\text{FUNC}} + \boxed{7}$

Remarque :

L'atténuation numérique est valable pour le convertisseur N/A intégré. Utiliser la sortie analogique pour contrôler cette fonction.

1. Réglage du Décalage de Mise au Point

- But : Régler la tension de décalage c.c. de l'amplificateur d'erreur de mise au point à −50 mV.
- Symptômes en cas de mauvais ajustement : Le lecteur ne met pas au point. Le signal HF est trouble.

● Connexion de l'instrument	● Connecter l'oscilloscope à la Broche 6 (FOER) de CN109.
● Réglage	● 5 mV/div., 10 mS/div., mode c.c.
● Etat du lecteur	● Arrêt (seule l'alimentation est mise)
● Point de réglage	● VR2 (FO. OFS)
● Disque	● Pas nécessaire

- Connexion

- Procédure

Ajuster VR2 (FO. OFS) pour régler la tension de la Broche 6 (FOER) de CN109 à −50 ±50 mV.

2. Réglage de la Grille

- But : Régler les deux points du faisceau laser de génération d'erreur d'alignement à un angle optimum sur la piste.
- Symptômes en cas de mauvais ajustement : Le lecteur ne commence pas la reproduction. N'effectue pas la recherche de piste. Saute une(des) piste(s).

● Connexion de l'instrument	● Connecter l'oscilloscope à la Broche 2 (TRER) de CN109 via le filtre passe-bas (voir Fig. 2)
● Réglage	● 50 mV/div., 5 mS/div., mode c.c.
● Etat du lecteur	● Servos de mise au point et d'axe fermés. Servo d'alignement ouvert.
● Point de réglage	● Fente de réglage de grille du capteur.
● Disque	● YEDS-7

- Connexion

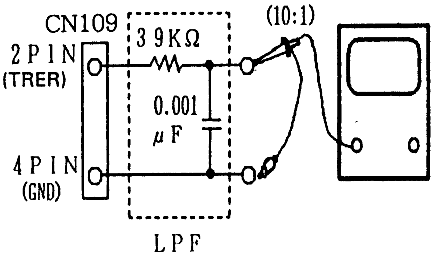
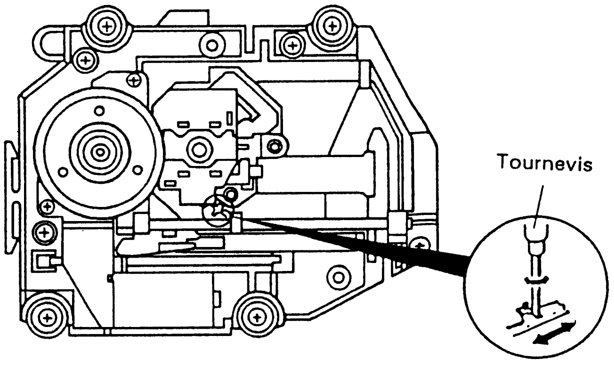


Fig. 2



Point de réglage

- Procédure

1. Déplacer le capteur à proximité du bord externe du disque en utilisant la touche "4 + MULTI-SPEED" ou "5 + MULTI-SPEED".
2. Appuyer sur la touche "1 + MULTI-SPEED", puis sur la touche "2 + MULTI-SPEED" pour fermer les servos de mise au point et d'axe.
3. Introduire un tournevis dans la fente de réglage de grille.
   Ajuster la grille et trouver le point nul. Voir à la page suivante pour plus de détails.
4. Une rotation lente du tournevis dans le sens inverse des aiguilles d'une montre à partir du point nul augmente progressivement l'amplitude de la forme d'onde. Une rotation continue du tournevis rediminue l'amplitude de la forme d'onde. Tourner le tournevis dans le sens inverse des aiguilles d'une montre à partir du point nul pour trouver le premier point maximum d'amplitude de forme d'onde.

(Référence)
La Fig. 3 indique la relation entre l'angle de faisceau d'alignement à la piste et la forme d'onde.

- Comment trouver le point nul

Introduire un tournevis dans la fente de réglage de grille et changer l'angle de grille. Avec cette méthode, l'amplitude du signal d'erreur d'alignement de la Broche 2 de CN109 peut être changée. Il y a plusieurs points où l'amplitude de la forme d'onde diminue dans la gamme de grille variable. Parmi ces points, un seul permet à l'enveloppe d'être régulière. Ceci signifie que les trois faisceaux laser divisés par la grille sont sur la même piste (voir Fig. 3). Ce point est appelé le point nul. Régler la grille pour trouver le point nul et l'utiliser comme position de référence pour le réglage de la grille.

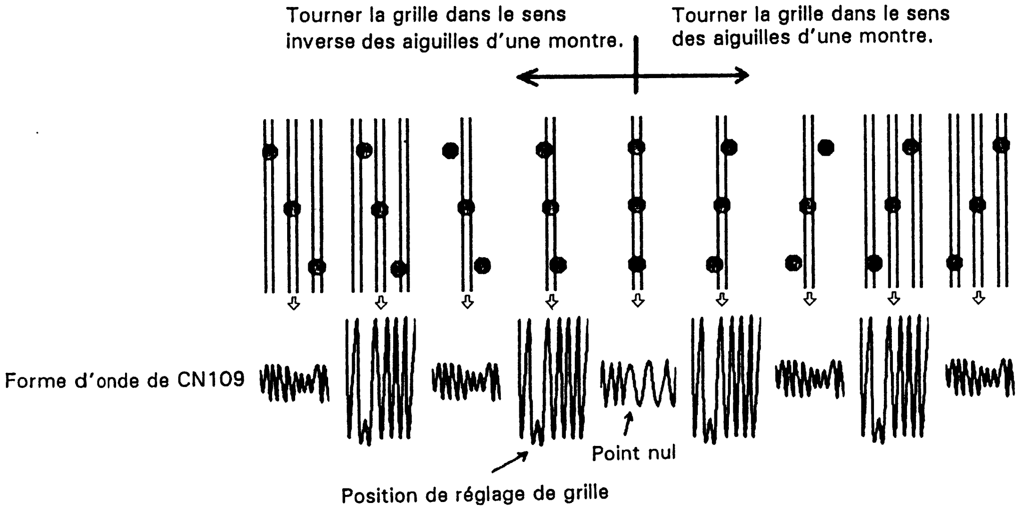
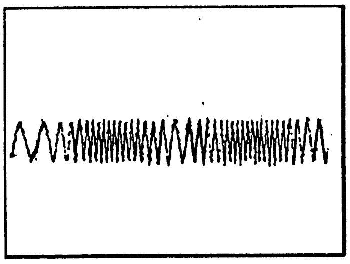
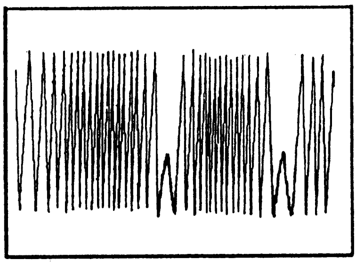

Tourner la grille dans le sens inverse des aiguilles d'une montre.
Tourner la grille dans le sens des aiguilles d'une montre.
Forme d'onde de CN109
Point nul
Position de réglage de grille

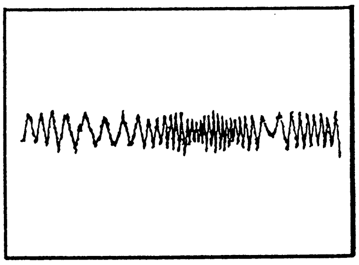
Fig. 3



Forme d'onde du point nul



Forme d'onde de l'amplitude maximum



Forme d'onde d'un point autre que le point nul

Remarque :

L'amplitude du signal d'erreur d'alignement est d'approximativement 3 Vc-c. Si l'amplitude est très petite (2 Vc-c) (en utilisant un LPF (filtre passe-bas) de 39 kΩ + 0,001 µF), la lentille peut ne pas être propre ou le capteur peut ne pas fonetionner.

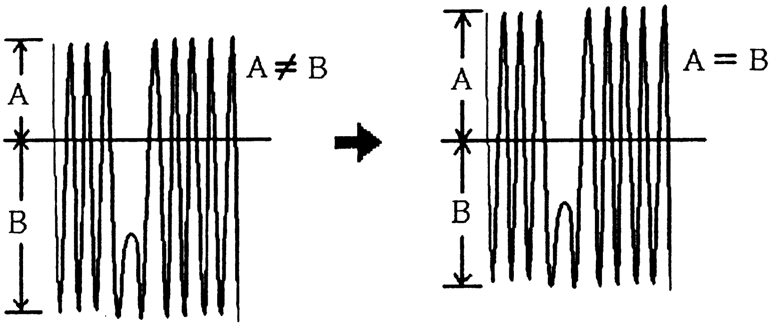
Si l'amplitude du signal d'erreur fluctue de plus de 10% entre les bords interne et externe d'un disque, la grille n'est pas ajustée au point maximum. Ajuster correctement la grille.

3. Réglage D'équilibre D'erreur D'alignement

- But : Corriger les niveaux de sensibilité de la photodiode d'alignement au même niveau.
- Symptômes en cas de mauvais ajustement : Le lecteur ne commence pas la reproduction. N'effectue pas la recherche de piste.

● Connexion de l'instrument	● Connecter l'oscilloscope à la Broche 2 (TRER) de CN109 (le filtre passe-bas peut être utilisé).
● Réglage	● 50 mV/div., 5 mS/div., mode c.c.
● Etat du lecteur	● Servos de mise au point et d'axe fermés. Servo d'alignement ouvert.
● Point de réglage	● VR1 (TR. BAL)
● Disque	● YEDS-7

- Connexion



Avec composante de courant continu

Sans composante de courant continu

- Procédure

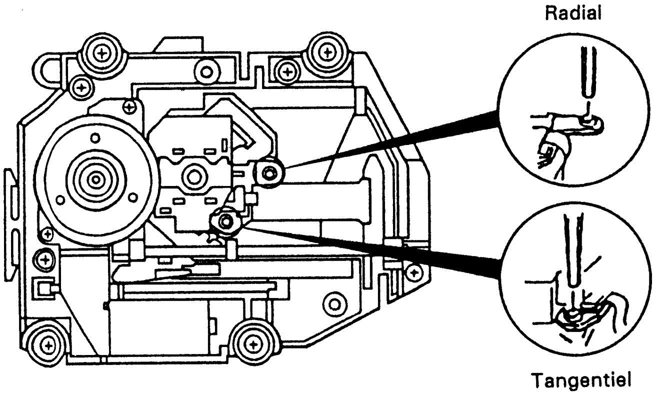
1. Déplacer le capteur au centre entre les bords interne et externe du disque (R = 35 mm) en utilisant la touche "4 + MULTI-SPEED" ou "5 + MULTI-SPEED".
2. Appuyer sur la touche "1 + MULTI-SPEED", puis sur la touche "2 + MULTI-SPEED" pour fermer les servos de mise au point et d'axe.
3. Aligner la ligne claire (GND) de l'oscilloscope sur le centre de l'écran de l'oscilloscope, et passer au mode c.c..
4. Ajuster VR1 (TR. BAL) pour rendre l'amplitude du côté positif identique au côté négatif du signal d'erreur d'alignement de la Broche 2 (TRER) de CN109 (pour qu'il n'y ait pas de composante CC).

4. Réglage de L'inclinaison Radiale/Tangentielle du Capteur

- But : Ajuster l'angle du capteur par rapport au disque, et optimiser le signal HF à lire en irradiant verticalement le faisceau laser par rapport au disque.
- Symptômes en cas de mauvais ajustement : Saut du son. Certains disques ne peuvent pas être reproduits.

● Connexion de l'instrument	● Connecter l'oscilloscope à la Broche 1 (RF) de CN109.
● Réglage	● 20 mV/div., 200 nS/div., mode c.a.
● Etat du lecteur	● Reproduction
● Point de réglage	● Vis de réglage d'inclinaison radiale et vis de réglage d'inclinaison tangentielle du capteur.
● Disque	● YEDS-7

- Connexion



Point de réglage

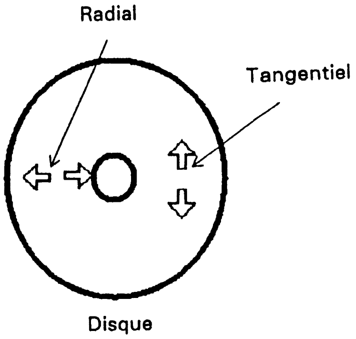


Fig. 4

- Procédure

1. Déplacer le capteur à proximité du bord externe du disque en utilisant la touche "4 + MULTI-SPEED". Appuyer en séquence sur les touches "1 + MULTI-SPEED", "2 + MULTI-SPEED" et "3 + MULTI-SPEED" pour fermer les servos de mise au point, d'axe et d'alignement et régler le lecteur au mode de reproduction.
2. Utiliser une clé hexagonale (3 mm) pour régler la vis de réglage d'inclinaison radiale de manière à ce que le modèle d'oeil (forme d'onde en forme de diamant qui apparaît au centre du signal HF) soit le mieux indiqué.
3. Utiliser la clé hexagonale pour régler la vis de réglage d'inclinaison tangentielle de manière à ce que le modèle d'oeil soit le mieux indiqué (voir Fig. 5).
4. Ajuster de nouveau la vis de réglage d'inclinaison radiale, puis la vis de réglage d'inclinaison tangentielle de manière à ce que le modèle d'oeil soit le mieux indiqué. Si nécessaire, ajuster alternativement les deux vis de réglage de manière à ce que le modèle d'oeil soit le mieux indiqué.

Remarque :
Radial et tangentiel se rapportent aux directions en relation avec les disques, de la manière indiquée dans la Fig. 4.

Réglage de L'inclinaison Radiale/Tangentielle du Capteur 2/2

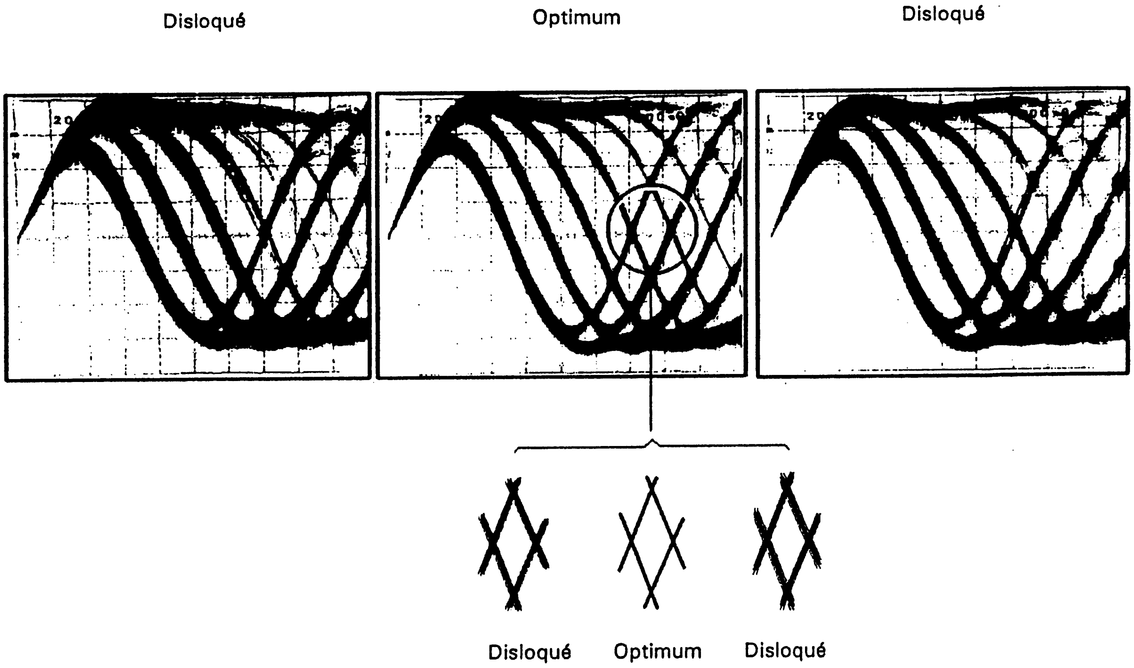

Disloqué
Optimum
Disloqué
Disloqué
Optimum
Disloqué

Fig. 5

5. Réglage du niveau HF

- But : Optimiser l'amplitude du signal HF de reproduction.

- Symptômes en cas de mauvais ajustement : Le lecteur ne reproduit pas. N'effectue pas la recherche.

● Connexion de l'instrument	● Connecter l'oscilloscope à la Broche 1 (RF) de CN109.
● Réglage	● 50 mV/div., 10 mS/div., mode c.a.
● Etat du lecteur	● Reproduction
● Point de réglage	● VR5 (puissance laser)
● Disque	● YEDS-7

- Connexion

- Procédure

1. Déplacer le capteur au centre entre les bords interne et externe du disque (R = 35 mm) en utilisant la touche "4 + MULTI-SPEED" ou "5 + MULTI-SPEED". Appuyer en séquence sur les touches "1 + MULTI-SPEED", "2 + MULTI-SPEED" et "3 + MULTI-SPEED" pour fermer les servos et régler le lecteur au mode de reproduction.
2. Ajuster VR5 pour régler l'amplitude du signal HF à 1,2 Vc-c +0,3/−0,1 V.

6. Réglage du Gain de Boucle du Servo de Mise au Point

- But : Régler le gain de boucle du servo de mise au point à la valeur optimum.
- Symptômes en cas de mauvais ajustement : Le lecteur ne commence pas la reproduction. Le son du dispositif de commande de mise au point est haut.

● Connexion de l'instrument	● Voir Fig. 6.
● Réglage	● CH1 : 20 mV/div., mode X−Y CH2 : 5 mV/div.
● Etat du lecteur	● Reproduction
● Point de réglage	● VR3 (FO. GAN)
● Disque	● YEDS-7

- Connexion

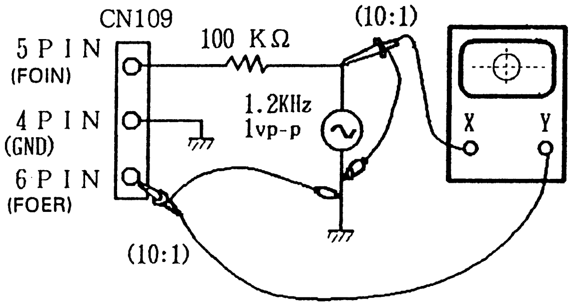
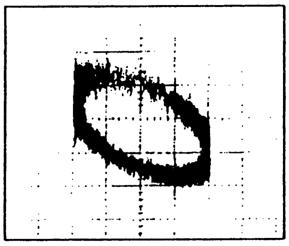
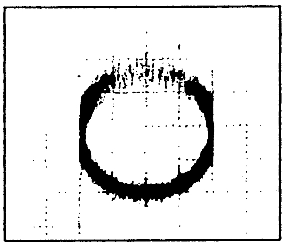
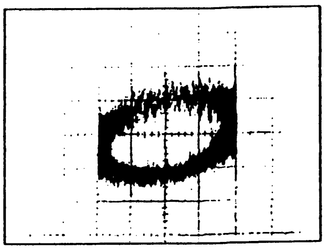


Fig. 6


Le gain est trop important.


Gain optimum


Le gain est trop petit.

- Procédure

1. Régler la sortie de l'oscillateur AF à 1,2 kHz et 1 Vc-c.
2. Déplacer le capteur au centre entre les bords interne et externe du disque (R = 35 mm) en utilisant la touche "4 + MULTI-SPEED" ou "5 + MULTI-SPEED". Appuyer en séquence sur les touches "1 + MULTI-SPEED", "2 + MULTI-SPEED" et "3 + MULTI-SPEED" pour fermer les servos et régler le lecteur au mode de reproduction.
3. Ajuster VR3 (FO. GAN) pour que les formes d'onde de Lissajou deviennent respectivement symétriques aux axes X et Y.

7. Réglage du Gain de Boucle du Servo D'alignement

- But : Régler le gain de boucle du servo d'alignement à la valeur optimum.
- Symptômes en cas de mauvais ajustement : Le lecteur ne commence pas la reproduction. Le son du dispositif de commande de mise au point est haut pendant la recherche. Saute une(des) piste(s).

● Connexion de l'instrument	● Voir Fig. 7.
● Réglage	● CH1 : 50 mV/div., mode X−Y CH2 : 5 mV/div.
● Etat du lecteur	● Reproduction
● Point de réglage	● VR4 (TR. GAN)
● Disque	● YEDS-7

- Connexion

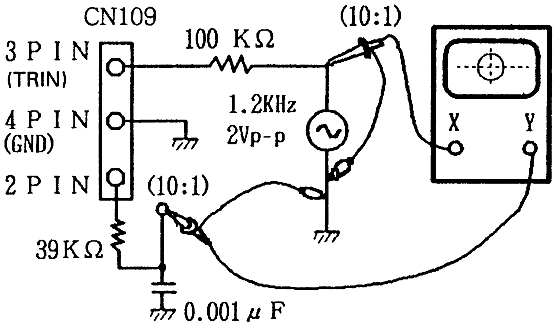
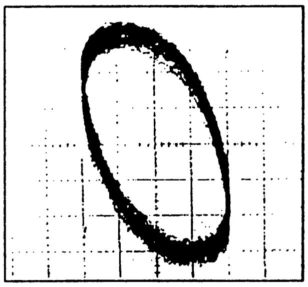
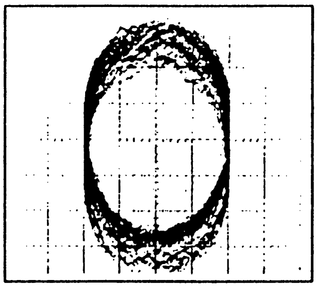


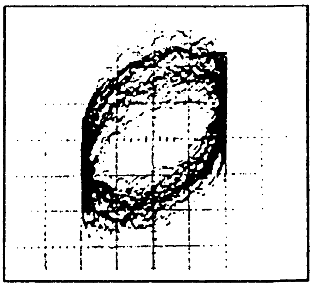
Fig. 7



Le gain est trop important.



Gain optimum



Le gain est trop petit.

- Procédure

1. Régler la sortie de l'oscillateur AF à 1,2 kHz et 2 Vc-c.
2. Déplacer le capteur au centre entre les bords interne et externe du disque (R = 35 mm) en utilisant la touche "4 + MULTI-SPEED" ou "5 + MULTI-SPEED". Appuyer en séquence sur les touches "1 + MULTI-SPEED", "2 + MULTI-SPEED" et "3 + MULTI-SPEED" pour fermer les servos et régler le lecteur au mode de reproduction.
3. Ajuster VR4 (TR. GAN) pour que les formes d'onde de Lissajou deviennent respectivement symétriques aux axes X et Y.

8. Confirmation du Signal D'erreur de Mise au Point

- But : Evaluer le capteur en observant le signal d'erreur de mise au point. Que le capteur soit défectueux ou non peut être décidé à partir du niveau d'amplitude du signal d'erreur d'alignement (Voir "Réglage de l'équilibre d'erreur d'alignement") et en confirmant la forme d'onde du signal d'erreur de mise au point.
- Symptômes en cas de mauvais ajustement :

● Connexion de l'instrument	● Connecter l'oscilloscope à la Broche 6 (FCS ERR) de CN109.
● Réglage	● 100 mV/div., 5 mS/div., mode c.c.
● Etat du lecteur	● Arrêt
● Point de réglage	● Aucun
● Disque	● YEDS-7

- Connexion

- Procédure

1. Connecter la broche 5 de CN109 à GND.
2. Insérer un disque.
3. Une pression sur la touche "1 + MULTI-SPEED" tout en observant l'écran de l'oscilloscope vous permet d'observer pendant un instant la forme d'onde indiquée à la Fig. 8. Confirmer que l'amplitude est de 2,5 Vc-c ou plus et que l'amplitude du côté positif est approximativement la même que du côté négatif. Remarquer que la forme d'onde n'est affichée que pendant un instant lorsque la touche "1 + MULTI-SPEED" est enfoncée. Appuyer autant de fois que nécessaire sur la touche jusqu'à ce que la forme d'onde puisse être confirmée.

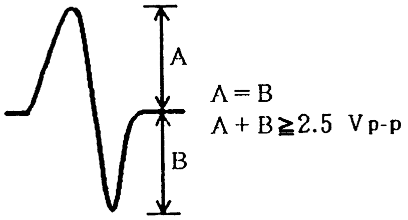


Fig. 8

[Evaluation du capteur]
Evaluer le capteur après avoir procédé correctement à tous les réglages. Si le résultat de l'évaluation est comme indiqué ci-dessous, le capteur peut être défectueux.

① L'amplitude du signal d'erreur d'alignement est extrêmement petite (2 Vc-c ou moins).
② L'amplitude du signal d'erreur de mise au point est extrêmement petite (2,5 Vc-c ou moins).
③ L'amplitude du côté positif du signal d'erreur de mise au point est extrêmement asymétrique du côté négatif (plus de 2 : 1).
④ Le signal HF est trop petit (0,8 Vc-c ou moins). Le signal n'atteint pas la valeur spécifiée, même après le réglage de VR5 (puissance laser).

9. AJUSTES

9.1 AJUSTE HORIZONTAL DEL CONJUNTO DE LA BASE DE TRANSFERENCIA (Fig. 9−1)

1. Extraiga aproximadamente 10 discos compactos de los conjuntos de bastidor derecho e izquierdo.
2. Ajuste el sistema al modo Super Manual (vea el apartado "11. ① Modo Super Manual″), y mueva entonces el conjunto de la base de transferencia hacia abajo.
3. Coloque una regla metálica en el lado izquierdo Ⓐ del soporte D (U). Ajuste la altura del conjunto de la base de transferencia al soporte D (U).
4. Coloque la regla metálica en el lado derecho Ⓑ del soporte D (U). Modifique la altura del conjunto de la base de transferencia ajustando el tornillo Ⓒ del tope de la correa (R). La diferencia de altura entre los conjuntos de base de transferencia derecho e izquierdo debe estar dentro de 0,1 mm.

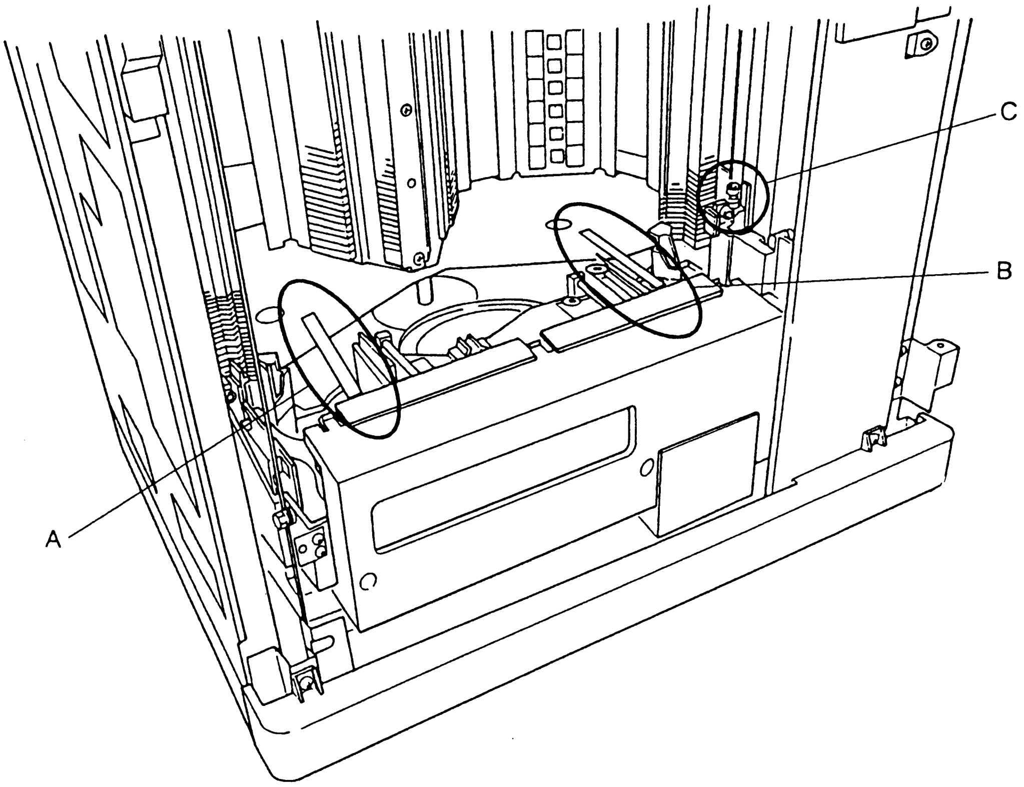


Fig. 9−1

9.2 AJUSTE DE LA VELOCIDAD DEL MOTOR VD (VERTICAL)

1. Haga la conexión como se muestra en la Fig. 9−2.
2. Ajuste el sistema al modo Super Manual (vea el apartado "11. ① modo Super Manual″), y ponga todos los interruptores DIP (S5 de la unidad KDSB) en la posición OFF (se seleccionará el motor VD).
3. Gire el motor VD presionado S1 ó S2 de la unidad KDSB.
4. Ajuste VR1 de modo que la forma de onda del osciloscopio pase a ser t = 17±0,5 μseg. (vea la Fig. 9−3).

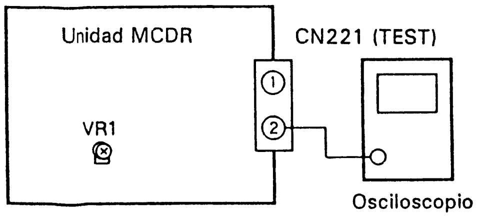


Fig. 9−2 Conexión

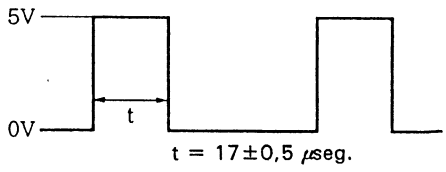


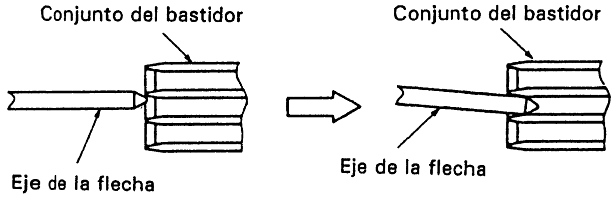
Fig. 9−3 Forma de onda

9.3 AJUSTE DE LA ALTURA DE LA PLACA DEL CODIFICADOR VD

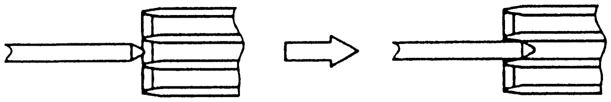
● Conjunto del Bastidor Izquierdo

1. Ajuste el sistema al modo Manual (vea el apartado "11. ② modo Manual"), y entonces mueva el conjunto de la base de transferencia a la dirección N.° 79 de instalación de CD.
2. Oscile el conjunto hacia el conjunto del bastidor izquierdo.
3. Ajuste el codificador VD 1 (izquierdo) de modo que el soporte del plato, conjunto del plato 1 y resorte del plato 3 queden inoperativos cuando se active el eje de la flecha. (Vea las Fig. 9−4 y 9−5 y la Tabla 9−1.)
4. Después de ajustar, mueva el conjunto de la base de transferencia verticalmente y confirme la altura en la dirección N.° 79.
5. Repita lo mismo para confirmar la altura en las direcciones de instalación de CD N.° 1, 12, 50, y 150.

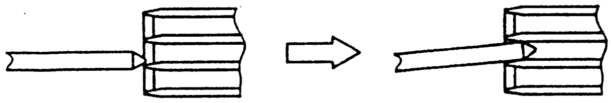
A : La posición de ajuste del codificador VD es demasiado alta (→ Baje la placa del codificador VD.)



B : Ajuste correcto



C : La posición de ajuste del codificador VD es demasiado baja (→ Suba la placa del codificador VD.)



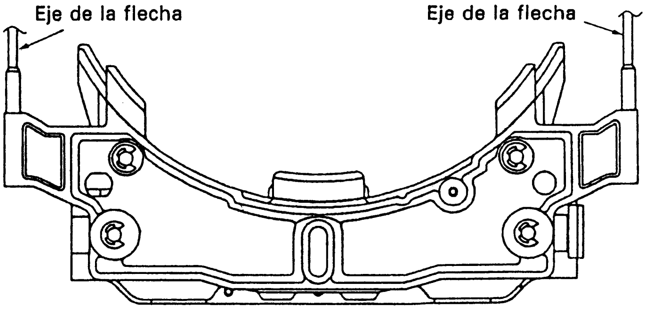
Ajuste de modo que el eje de la flecha y el conjunto del bastidor queden situados como se muestra en (B) de arriba (vea la Fig. 9−5).

Fig. 9−4

● Conjunto del Bastidor Derecho

1. Haga el ajuste del mismo modo que con el conjunto del bastidor izquierdo, a excepción de que la dirección de instalación de CD es la N.° 229.
2. Confirme también la altura en las direcciones de instalación de CD N.° 151, 200, y 300.

NOTA :
Si el CD toca la división del conjunto del bastidor (A) aunque el eje de la flecha esté en la posición central, el plato puede estar defectuoso, el eje de la flecha puede estar doblado o el disco deformado.



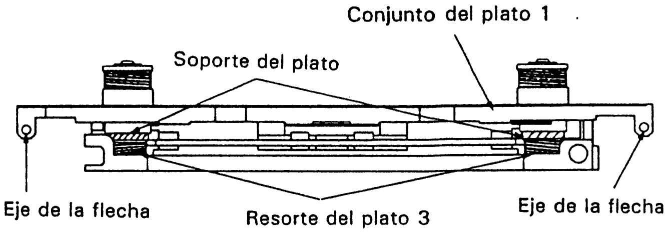


Fig. 9−5

El soporte de plato y el conjunto del plato 1 funcionan como se muestra en la tabla siguiente cuando se inserta el eje de flecha en el conjunto del bastidor.

	Soporte del Plato	Conjunto del Plato 1	Resorte del Plato 3
Fig. 9−4 A	Baja	Baja	Se contrae
Fig. 9−4 B	No opera	No opera	No opera
Fig. 9−4 C	No opera	Sube	No opera

Tabla 9−1

9.4 AJUSTE DEL REPRODUCTOR DE CD

Los reproductores de CD pueden operar incorrectamente o no operar en absoluto si se ajustan incorrectamente, aunque no pueda encontrarse ningún defecto en el fonocaptor y circuitos. Asegúrese de ajustar correctamente de acuerdo con el procedimiento de ajuste.

1. Ítemes de Ajuste / Puntos de Comprobación y Secuencia

Secuencia	Ítem	Punto de prueba	Punto de ajuste
1	Ajuste de descentramiento de enfoque	CN109, Patilla 6 (FOER)	VR2 (FO. OFS)
2	Ajuste de reticulado	CN109, Patilla 2 (TRER)	Ranura de ajuste de reticulado
3	Ajuste del balance de error de seguimiento	CN109, Patilla 2 (TRER)	VR1 (TR. BAL)
4	Ajuste de la inclinación radial/tangencial del fonocaptor	CN109, Patilla 1 (RF)	Tornillo de ajuste de inclinación radial, tornillo de ajuste de inclinación tangencial
5	Ajuste del nivel de RF	CN109, Patilla 1 (RF)	VR5 (nivel de RF)
6	Ajuste de la ganancia del bucle servo de enfoque	CN109, Patilla 5 (FOIN) CN109, Patilla 6 (FOER)	VR3 (FO. GAN)
7	Ajuste de la ganancia del bucle servo de seguimiento	CN109, Patilla 3 (TRIN) CN109, Patilla 2 (TRER)	VR4 (TR. GAN)
8	Confirmación de la señal de error de enfoque	CN109, Patilla 6 (FOER)	———

- Tabla de Abreviaturas

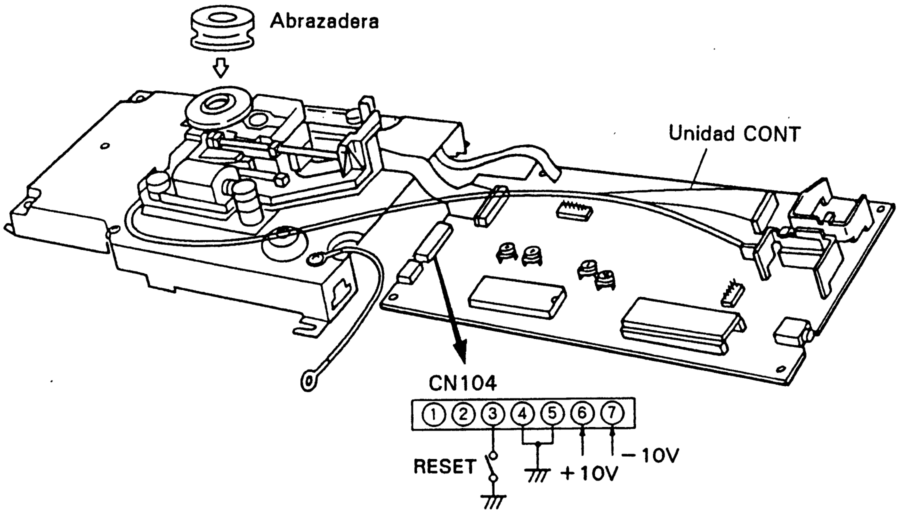
FOER	: Error de Enfoque	FO. OFS	: Descentramiento de Enfoque
FOIN	: Entrada de Enfoque	TR. BAL	: Balance de Seguimiento
TRIN	: Entrada de Seguimiento	FO. GAN	: Ganancia del Servobucle de Enfoque
TRER	: Error de Seguimiento	TR. GAN	: Ganancia del Servobucle de Seguimiento

2. Instrumentos y Herramientas

Emplee los instrumentos y herramientas siguientes para el ajuste :

1. Osciloscopio de trazado doble (sonda de 10 : 1)
2. Oscilador de baja frecuencia
3. Disco de prueba (YEDS-7)
4. Filtro de paso bajo (39 kΩ + 0,001 μF)
5. Resistor (100 kΩ)
6. Herramientas estándar

3. Ajuste del Reproductor de CD


Abrazadera
Unidad CONT
CN104
①②③④⑤⑥⑦
RESET
+10V
−10V

4. Posiciones de Los Puntos de Prueba y VR de Ajuste

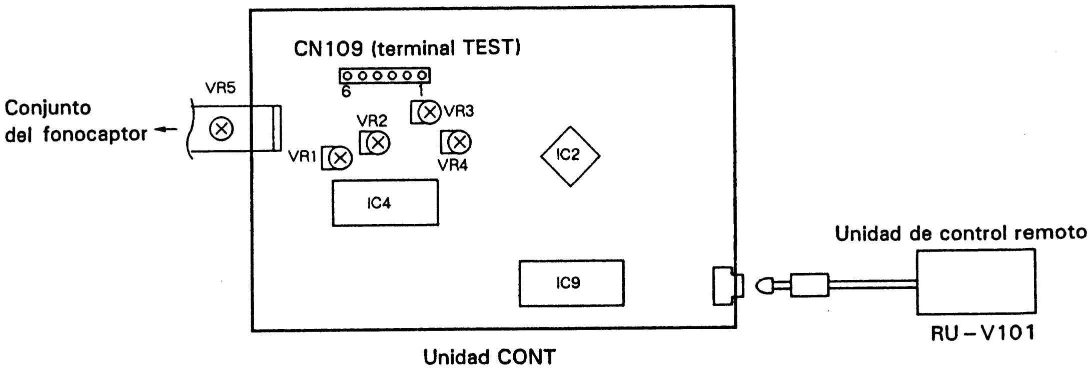

CN109 (terminal TEST)
6
1
VR5
Conjunto del fonocaptor
VR3
VR2
VR1
VR4
IC2
IC4
IC9
Unidad de control remoto
RU−V101
Unidad CONT

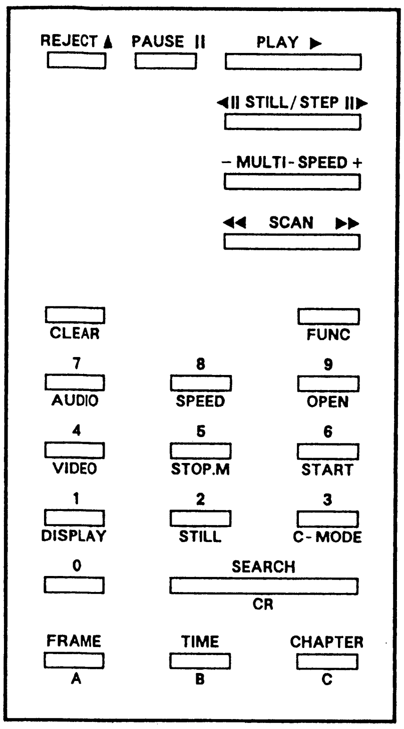
Fig. 1 Puntos de Ajuste

5. Notas

1. Emplee un osciloscopio con una relación de sonda de 10 : 1.
2. Todas las posiciones de los mandos de control (valores ajustados) del osciloscopio mostrado en este procedimiento de ajuste se basan en la condición del empleo de un osciloscopio con una relación de sonda de 10 : 1.

FUNCIONES DE LA UNIDAD DE CONTROL REMOTO DE SERVICIO

El reproductor de CD (PD-CACV3000) del Cargador automático de CD (CAC-V3000) puede operarse directamente empleando la unidad de control remoto (RU-V101). La unidad de control remoto tiene las funciones siguientes :



RU-V101

REJET		: Parada del pivote
PAUSE		: Pausa
PLAY		: Reproducción
STILL/STEP II▶		: Selección de disco
STILL/STEP ◀II		: Retorno de disco
MULTI-SPEED +		: Comando de prueba
MULTI-SPEED −		:
SCAN ▶▶		: Exploración en avance
SCAN ◀◀		: Exploración en inversión
CLEAR		: Borrado
FRAME		: Especifica un bloque
TIME		: Especifica el tiempo
CHAPTER		: Especifica una canción
SEARCH		: Búsqueda
10 teclas		: Para introducir números
DISPLAY	(FUNC + 1)	: Sin entrada
STILL	(FUNC + 2)	: Sin entrada
C-MODE	(FUNC + 3)	: Sin entrada
VIDEO	(FUNC + 4)	: Volumen ajustado
STOP. M	(FUNC + 5)	: Marcador de parada
START	(FUNC + 6)	: Inicio
AUDIO	(FUNC + 7)	: Inicio de Entrada/Salida de fundido
SPEED	(FUNC + 8)	: Control de velocidad
OPEN	(FUNC + 9)	: Sin entrada
B	(FUNC + TIME)	: Ajuste del tiempo de fundido

Comando de Prueba

Tecla 0 + MULTI-SPEED (+, −)	: Diodo láser (LD) activado
Tecla 1 + MULTI-SPEED (+, −)	: Cierre de servoenfoque
Tecla 2 + MULTI-SPEED (+, −)	: Golpe de pivote
Tecla 3 + MULTI-SPEED (+, −)	: Seguimiento, servo de deslizador activado
Tecla 4 + MULTI-SPEED (+, −)	: Al presionar la tecla FWD del deslizador una vez se moverá el fonocaptor aproximadamente la mitad de una carrera completa.
Tecla 5 + MULTI-SPEED (+, −)	: Al presionar la tecla REV del deslizador una vez se moverá el fonocaptor aproximadamente la mitad de una carrera completa.
Tecla 6 + MULTI-SPEED (+, −)	: Seguimiento, servo de deslizador desactivado
Tecla 7 + MULTI-SPEED (+, −)	: Parada de deslizador, parada de pivote
Tecla 8 + MULTI-SPEED (+, −)	:
Tecla 9 + MULTI-SPEED (+, −)	: Abertura de servoenfoque

Empleo del Comando SPEED

Suponiendo que la velocidad normal es igual a 100, la velocidad de 90 a 110 se expresa como −10 a +10%.

Ejemplo : Cambio de la velocidad en −10%

$\boxed{9}$ + $\boxed{0}$ + $\boxed{\text{FUNC}}$ + $\boxed{8}$

Nota :

- *La velocidad cambiada no retornará a la normal al presionar el botón REJECT. Para reanudar la velocidad normal, presione la tecla de selección de disco.*
- *Presione siempre la tecla de selección de disco después de haber presionado la tecla de retorno de disco. De lo contrario, el sistema no aceptará los comandos.*

Para Comprobar el Atenuador Digital

Pueden ajustarse el nivel de atenuación y el tiempo de fundido. La función de fundido de aparición/desaparición gradual también se ejecuta con este controlador remoto.

Ejemplo 1 : Ajuste el tiempo de funido a 10 segundos.

$\boxed{1}$ + $\boxed{0}$ + $\boxed{\text{FUNC}}$ + $\boxed{\text{TIME}}$

Ejemplo 2 : Nivel maximo de atenuación. (silenciamiento)

$\boxed{0}$ + $\boxed{\text{FUNC}}$ + $\boxed{4}$

Ejemplo 3 : Inicie la aparición gradual.

$\boxed{2}$ + $\boxed{5}$ + $\boxed{5}$ + $\boxed{\text{FUNC}}$ + $\boxed{7}$

Nota :

La atenuación digital es válida para el convertidor D/A incorporado. Por lo tanto, emplee la salida analógica para comprobar esta función.

1. Ajuste del Descentramiento de Enfoque

- Propósito : Para ajustar la tensión de descentramiento de CC del amplificador de error de enfoque a = 50 mV.

- Síntoma de ajuste incorrecto : El reproductor no enfoca. La señal de RF no es clara.

● Conexión del instrumento	● Conecte el osciloscopio a la patilla 6 (FOER) de CN109.
● Ajuste	● 5 mV/div, 10 mS/div, modo de CC
● Condición del reproductor	● Parada (sólo la alimentación está conectada)
● Punto de ajuste	● VR2 (FO. OFS)
● Disco	● No es necesario

- Conexión

- Procedimiento

Ajuste VR2 (FO. OFS) para ajustar la tensión de la patilla 6 (FOER) de CN109 a −50 ±50 mV.

2. Ajuste de Reticulado

- Propósito : Ajustar los dos puntos del haz de láser para seguimiento de la generación de errores al ángulo óptimo en la pista.
- Síntoma de ajuste incorrecto : El reproductor no inicia la reproducción. No efectúa la búsqueda de canciones. Salta canciones.

● Conexión del instrumento	● Conecte el osciloscopio a la patilla 2 (TRER) de CN109 a través del filtro de paso bajo (vea la Fig. 2).
● Ajuste	● 50 mV/div, 5 mS/div, modo de CC
● Condición del reproductor	● Servos de enfoque y de pivote cerrados. Servo de seguimiento abierto.
● Punto de ajuste	● Ranura de ajuste de reticulado del fonocaptor.
● Disco	● YEDS-7

- Conexión

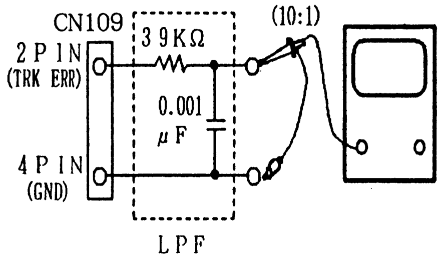
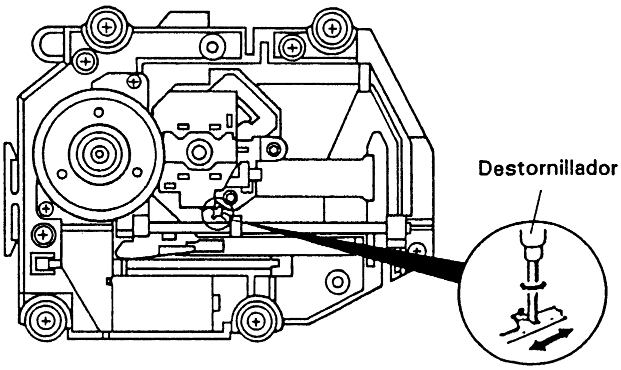


Fig. 2



Punto de ajuste

- Procedimiento

1. Mueva el fonocaptor cerca del borde del disco empleando la tecla "4 + MULTI-SPEED" ó "5 + MULTI-SPEED".
2. Presione tecla "1 + MULTI-SPEED", y luego la tecla "2 + MULTI-SPEED" para cerrar los servos de enfoque y del pivote.
3. Inserte el destornillador en la ranura de ajuste del reticulado. Ajuste el reticulado y encuentre el punto nulo. Para más detalles, vea la página siguiente.
4. Girando lentamente el destornillador hacia la izquierda desde el punto nulo se incrementará gradualmente la amplitud de la forma de onda. Si se sigue girando el destornillador, se reducirá de nuevo la amplitud de la forma de onda.
   Gire el destornillador hacia la izquierda desde el punto nulo para encontrar el primer punto máximo de amplitud de forma de onda.

(Referencia)
La Fig. 3 muestra la relación entre el ángulo del haz de seguimiento con la pista y la forma de onda.

Ajuste de Reticulado 2/2

- Cómo encontrar el punto nulo

Inserte el destornillador en la ranura de ajuste del reticulado y cambie el ángulo del reticulado. Con este método, puede cambiarse la amplitud de la señal de error de seguimiento de la patilla 2 de CN109, Hay varios puntos donde la amplitud de forma de onda se reduce con el margen variable del reticulado. Entre estos puntos, sólo un punto permite que la envolvente sea uniforme. Esto significa que los tres haces de láser divididos por el reticulado están en la misma pista (vea la Fig. 3).

Este punto se denomina punto nulo. Ajuste el reticulado para encontrar el punto nulo y empléelo como posición de referencia para el ajuste del reticulado.

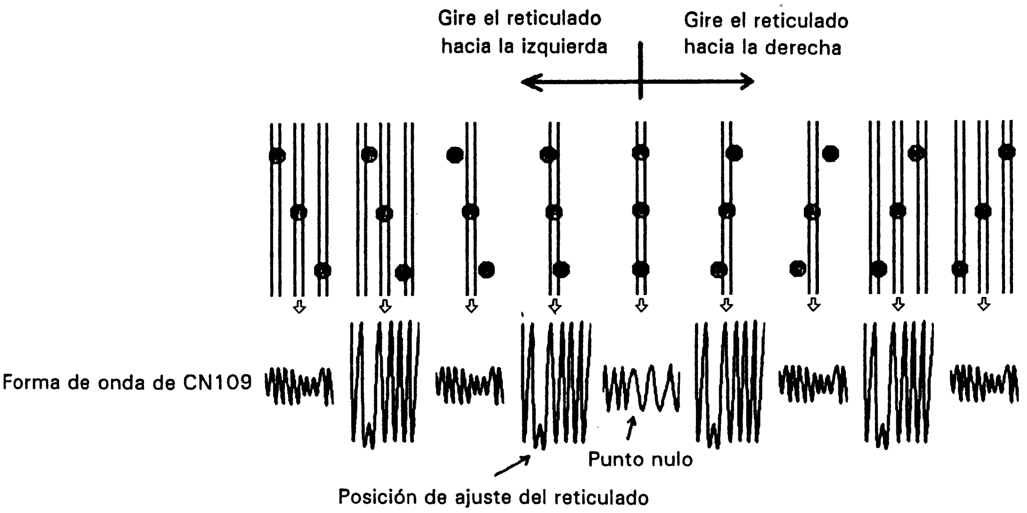
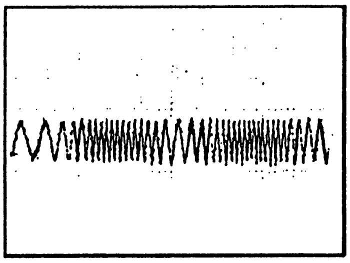
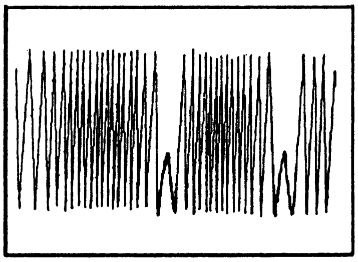

Gire el reticulado hacia la izquierda
Gire el reticulado hacia la derecha
Forma de onda de CN109
Punto nulo
Posición de ajuste del reticulado

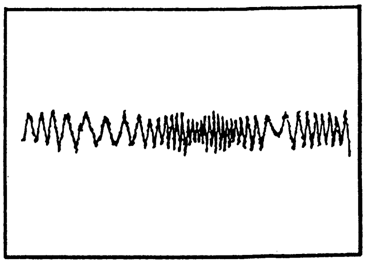
Fig. 3



Forma de onda del punto nulo



Forma de onda de la amplitud máxima



Forma de onda de un punto que no es el punto nulo

Nota :

La amplitud de la señal de error de seguimiento es aproximadamente de 3 Vp-p. Si la amplitud es muy pequeña (2 Vp-p) (empleando LPF de 39 kΩ + 0,001 μF), la lente puede no estar limpia o el fonocaptor puede funcionar mal.

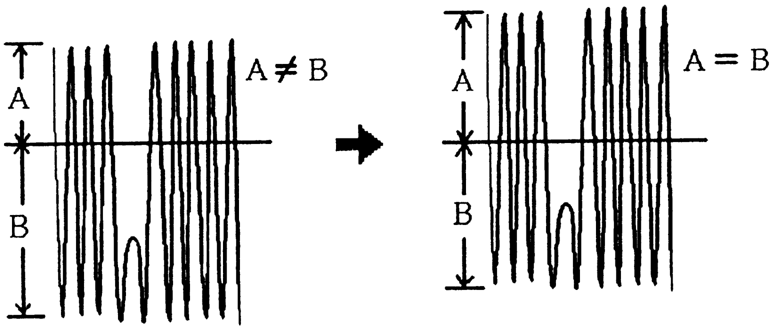
Si la amplitud de la señal de error fluctúa más del 10% entre los bordes interior y exterior de un disco, significa que el reticulado no está ajustado en el punto óptimo. Ajuste el reticulado correctamente.

3. Ajuste del Balance de Error de Seguimiento

- Propósito : Corregir los niveles de sensibilidad del fotodiodo de seguimiento al mismo nivel.
- Síntoma de ajuste incorrecto : El reproductor no inicia la reproducción. No efectúa la búsqueda de canciones.

● Conexión del instrumento	● Conecte el osciloscopio a la patilla 2 (TRER) de CN109 (puede usarse el filtro de paso bajo).
● Ajuste	● 50 mV/div, 5 mS/div, modo de CC
● Condición del reproductor	● Servos de enfoque y de pivote cerrados. Servo de seguimiento abierto.
● Punto de ajuste	● VR1 (TR. BAL)
● Disco	● YEDS-7

- Conexión



Con componente de corriente continua

Sin componente de corriente continua

- Procedimiento

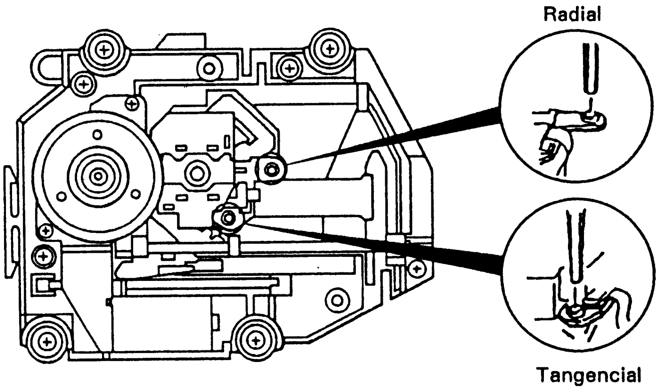
1. Mueva el fonocaptor al centro entre la circunferencia interior y los bordes exteriores del disco (R = 35 mm) empleando la tecla "4 + MULTI-SPEED" ó "5 + MULTI-SPEED".
2. Presione tecla "1 + MULTI-SPEED", y luego la tecla "2 + MULTI-SPEED" para cerrar los servos de enfoque y del pivote.
3. Alinee la línea brillante (GND) del osciloscopio con el centro de la pantalla del osciloscopio, y cambie al modo de CC.
4. Ajuste VR1 (TR. BAL) para hacer la amplitud del lado positivo igual que la del lado negativo de la señal de error de seguimiento de la patilla 2 (TRER) de CN109 (de modo que no haya componente de CC).

4. Ajuste de la Inclinación Radial/Tangencial del Fonocaptor

- Propósito : Ajustar el ángulo del fonocaptor con el disco, y optimizar la señal de RF a leerse irradiando verticalmente el haz de láser al disco.
- Síntoma de ajuste incorrecto : Se salta sonido. Algunos discos no pueden reproducirse.

● Conexión del instrumento	● Conecte el osciloscopio a la patilla 1 (RF) de CN109.
● Ajuste	● 20 mV/div, 200 nS/div, modo de CA
● Condición del reproductor	● Reproducción
● Punto de ajuste	● El tornillo de ajuste de la inclinación radial y tornillo de ajuste de la inclinación tangencial del fonocaptor.
● Disco	● YEDS-7

- Conexión



Punto de ajuste

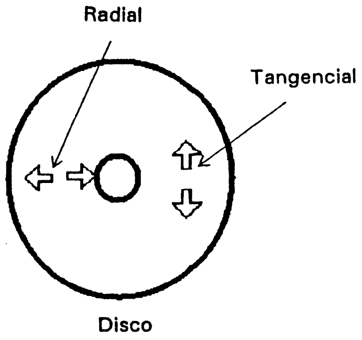


Fig. 4

- Procedimiento

1. Mueva el fonocaptor cerca del borde exterior del disco empleando la tecla "4 + MULTI-SPEED".
   Presione tecla "1 + MULTI-SPEED", la tecla "2 + MULTI-SPEED", y "3 + MULTI-SPEED" en secuencia para cerrar los servos de enfoque, del pivote y de seguimiento y ajustar el reproductor al modo de reproducción.
2. Emplee una llave hexagonal (3 mm) para ajustar el tornillo de ajuste de inclinación radial de modo que el patrón de ojo (forma de onda en forma de diamante que aparece en el centro de la señal de RF) se vea con la mayor claridad.
3. Emplee la llave hexagonal para ajustar el tornillo de ajuste de inclinación tangencial de modo que el patrón de ojo se muestre con la mayor claridad (vea la Fig. 5).
4. Ajuste de nuevo el tornillo de ajuste de inclinación radial, y luego el tornillo de ajuste de inclinación tangencial de modo que el patrón de ojo se muestre con la mayor claridad. Si es necesario, ajuste los dos tornillos de ajuste de forma alternada de modo que el patrón del ojo se muestre con la mayor claridad.

Nota :
Radial y tangencial se refieren a las direcciones con relación a los discos, como se muestra en la Fig. 4.

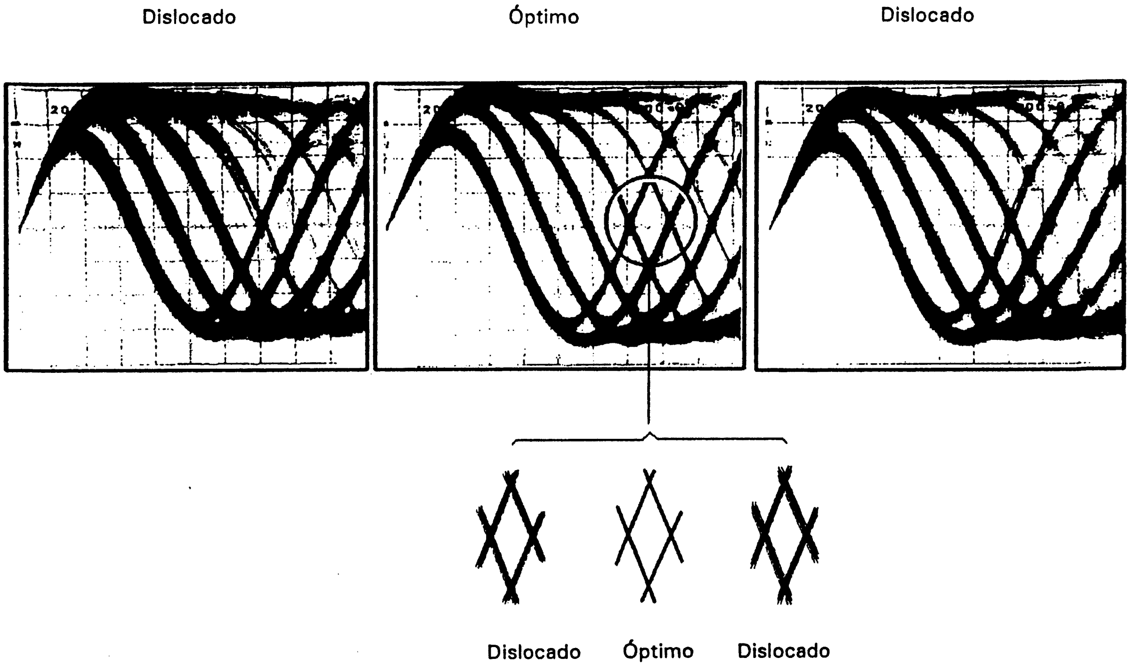

Dislocado
Óptimo
Dislocado
Dislocado
Óptimo
Dislocado

Fig. 5

5. Ajuste del Nivel de RF

- Propósito : Optimizar la amplitud de la señal de RF reproducida.

- Síntoma de ajuste incorrecto : El reproductor no inicia la reproducción. No efectúa la búsqueda de canciones.

Conexión del instrumento	Conecte el osciloscopio a la patilla 1 (RF) de CN109.
Ajuste	50 mV/div, 10 mS/div, modo de CA
Condición del reproductor	Reproducción
Punto de ajuste	VR5 (alimentación de láser)
Disco	YEDS-7

- Conexión

- Procedimiento

1. Mueva el fonocaptor al centro entre los bordes interior y exterior del disco (R = 35 mm) empleando la tecla "4 + MULTI-SPEED" ó "5 + MULTI-SPEED". Presione tecla "1 + MULTI-SPEED", la tecla "2 + MULTI-SPEED", y "3 + MULTI-SPEED" en secuencia para cerrar los servos y ajustar el reproductor al modo de reproducción.
2. Ajuste VR5 para ajustar la amplitud de la señal RF a 1,2 Vp-p +0,3/−0,1 V.

6. Ajuste de la Ganancia del Bucle del Servo de Enfoque

- Propósito : Ajustar la ganancia del bucle del servo de enfoque al valor óptimo.
- Síntoma de ajuste incorrecto : El reproductor no inicia la reproducción. El sonido del activador de enfoque es alto.

● Conexión del instrumento	● Vea la Fig. 6.
● Ajuste	● CH1 : 20 mV/div, modo X−Y CH2 : 5 mV/div
● Condición del reproductor	● Reproducción
● Punto de ajuste	● VR3 (FO. GAN)
● Disco	● YEDS-7

- Conexión

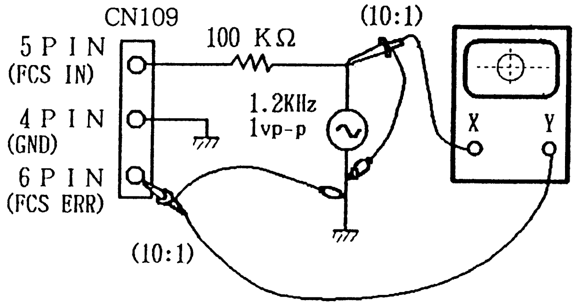
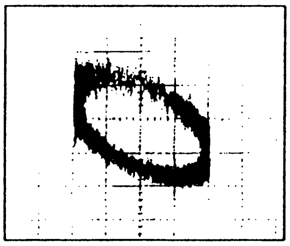
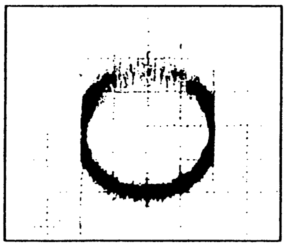


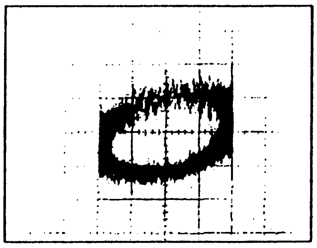
Fig. 6



Ganancia excesiva



Ganancia óptima



Ganancia insuficiente

- Procedimiento

1. Ajuste la salida del oscilador de AF a 1,2 kHz y 1 Vp−p.
2. Mueva el fonocaptor al centro entre los bordes interior y exterior del disco (R = 35 mm) empleando la tecla “4 + MULTI-SPEED” ó “5 + MULTI-SPEED”. Presione tecla “1 + MULTI-SPEED”, la tecla “2 + MULTI-SPEED”, y “3 + MULTI-SPEED” en secuencia para cerrar los servos y ajustar el reproductor al modo de reproducción.
3. Ajuste VR3 (FO. GAN) de modo que las formas de onda de Lissajous sean simétricas a los ejes X y Y, respectivamente.

7. Ajuste de la Ganancia del Bucle del Servo de Seguimiento

- Propósito : Ajustar la ganancia del bucle del servo de seguimiento al valor óptimo.
- Síntoma de ajuste incorrecto : El reproductor no inicia la reproducción. El sonido del activador es alto durante la búsqueda. Se saltas pistas.

● Conexión del instrumento	● Vea la Fig. 7.
● Ajuste	● CH1 : 50 mV/div, modo X−Y CH2 : 5 mV/div
● Condición del reproductor	● Reproducción
● Punto de ajuste	● VR4 (TR. GAN)
● Disco	● YEDS−7

- Conexión

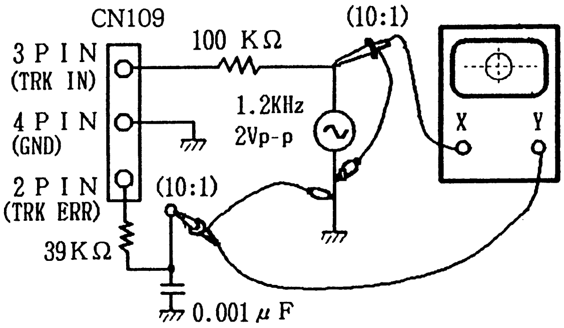
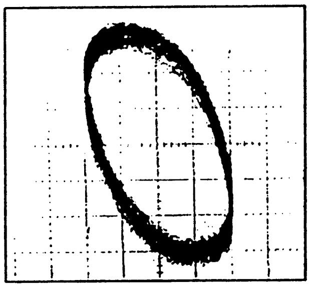
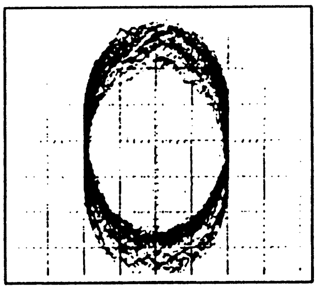


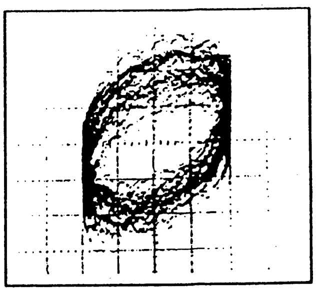
Fig. 7



Ganancia excesiva



Ganancia óptima



Ganancia insuficiente

- Procedimiento

1. Ajuste la salida del oscilador de AF a 1,2 kHz y 2 Vp−p.
2. Mueva el fonocaptor al centro entre los bordes interior y exterior del disco (R = 35 mm) empleando la tecla "4 + MULTI-SPEED" ó "5 + MULTI-SPEED". Presione tecla "1 + MULTI-SPEED", la tecla "2 + MULTI-SPEED", y "3 + MULTI-SPEED" en secuencia para cerrar los servos y ajustar el reproductor al modo de reproducción.
3. Ajuste VR4 (TR. GAN) de modo que las formas de onda de Lissajous sean simétricas a los ejes X y Y, respectivamente.

8. Confirmación de la Señal de Error de Enfoque

- Propósito : Evaluar el fonocaptor observando la señal de error de enfoque. Podrá decidirse si el fonocaptor está o no defectuoso partiendo del nivel de amplitud de la señal de error de seguimiento (vea "Ajuste del balance de la forma de onda de seguimiento") y confirmando la forma de onda de la señal de error de enfoque.
- Síntoma de ajuste incorrecto :

● Conexión del instrumento	● Conecte el osciloscopio a la patilla 6 (FOER) de CN109.
● Ajuste	● 100 mV/div, 5 mS/div, modo de CC
● Condición del reproductor	● Parada
● Punto de ajuste	● Ninguno
● Disco	● YEDS-7

- Conexión

- Procedimiento

1. Conecte la patilla 5 de CN109 a GND.
2. Inserte un disco.
3. Presionando la tecla "1 + MULTI-SPEED" mientras mira la pantalla del osciloscopio le permitirá observar durante un instante la forma de onda mostrada en la Fig. 8. Confirme que la amplitud sea de 2,5 Vp-p o mayor y que la amplitud del lado positivo sea aproximadamente igual que la del lado negativo. Tenga presente que la forma de onda se visualiza sólo durante un instante cuando se presiona la tecla "1 + MULTI-SPEED". Presione la tecla tantas veces como sea necesario hasta poder confirmar la forma de onda.

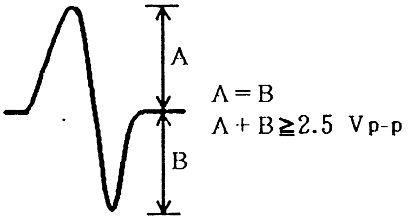


Fig. 8

[Evaluación del fonocaptor]
Evalúe el fonocaptor después de haber efectuado correctamente todos los ajustes. Si el resultado de la evaluación es como se indica abajo, el fonocaptor puede estar defectuoso.

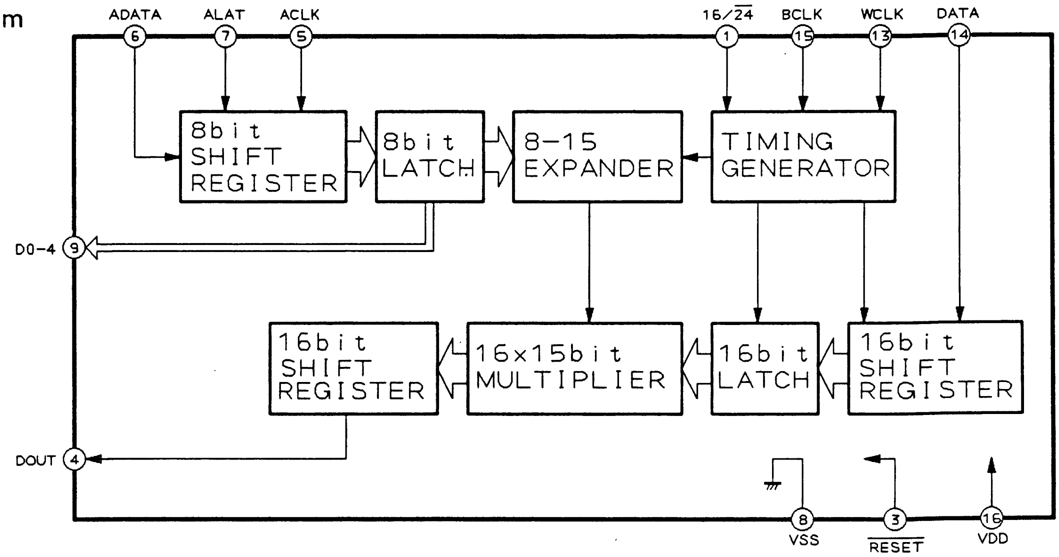
① La amplitud de la señal de error de seguimiento es muy pequeña (2 Vp-p o menor).
② La amplitud de la señal de error de enfoque es muy pequeña (2,5 Vp-p o menor).
③ La amplitud del lado positivo de la señal de error de enfoque es excesivamente asimétrica desde el lado negativo (más de 2 : 1).
④ La señal de RF es demasiado pequeña (0,8 Vp-p o menor). La señal no llega al valor especificado ni después del ajuste de VR5 (alimentación de láser).

10. IC INFORMATION

- *The information shown in the list is basic information and may not correspond exactly to that shown in the schematic diagrams.*

10.1 PD0026A (DGIF UNIT : IC406, IC407)

- **Digital Attenuator IC**
- Block Diagram


ADATA
⑥
ALAT
⑦
ACLK
⑤
16/$\overline{24}$
①
BCLK
⑮
WCLK
⑬
DATA
⑭
8bit SHIFT REGISTER
8bit LATCH
8–15 EXPANDER
TIMING GENERATOR
D0–4
⑨
16bit SHIFT REGISTER
16x15bit MULTIPLIER
16bit LATCH
16bit SHIFT REGISTER
DOUT
④
⑧
VSS
③
$\overline{\text{RESET}}$
⑯
VDD

- Pin Function

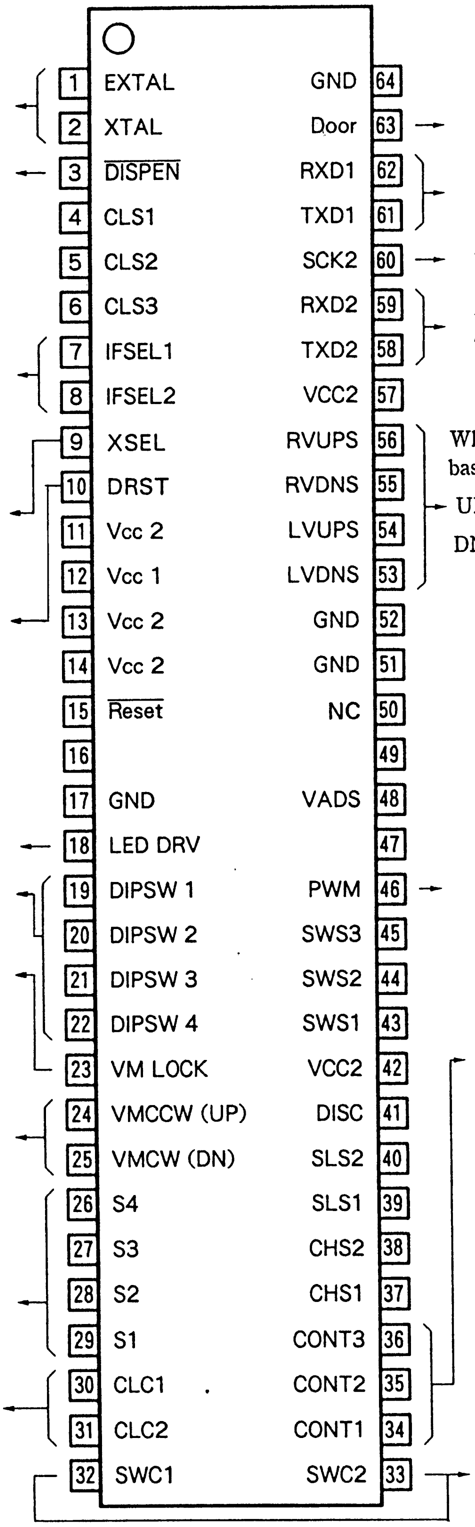
No.	Symbol	Terminal Name	I/O	Description
1	16/$\overline{24}$	16/$\overline{24}$	I	Changes the DATA format.
2	D4	ATTENUATION DATA 4	O	Displays the attenuation level (0 to −36 dB). Open drain output.
3	$\overline{\text{RESET}}$	$\overline{\text{RESET}}$	I	Resets the inside of IC (attenuation level = 0dB).
4	DOUT	DATA OUT	O	Outputs 16-bit serial data (complement of 2, MSB fast).
5	ACLK	ATTENUATION CLOCK	I	Clock signal for writing the attenuation level.
6	ADATA	ATTENUATION DATA	I	Inputs the attenuation level data (binary, MSB fast).
7	ALAT	ATTENUATION LATCH PULSE	I	Inputs the attenuation level latch pulse.
8	VSS			Ground terminal.
9	D0	ATTENUATION DATA 0	O	Displays the attenuation level (0dB). Open drain output.
10	D1	ATTENUATION DATA 1	O	Displays the attenuation level (0 to −6dB). Open drain output.
11	D2	ATTENUATION DATA 2	O	Displays the attenuation level (0 to −12dB). Open drain output.
12	D3	ATTENUATION DATA 3	O	Displays the attenuation level (0 to −24dB). Open drain output.
13	WCLK	WORD CLOCK	I	Word clock input.
14	DATA	DATA	I	Inputs 16-bit serial data (complement of 2, MSB fast).
15	BCLK	BIT CLOCK	I	Bit clock input.
16	VDD			Power supply.

10.2 PD3222A (MCDR UNIT : IC1)

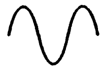
● Micro-computer

- Pin Assignment

Note :
Ⓗ or 1 : 5V
Ⓛ or 0 : 0V
Ⓜ : Motor


1 EXTAL
2 XTAL
3 DISPEN
4 CLS1
5 CLS2
6 CLS3
7 IFSEL1
8 IFSEL2
9 XSEL
10 DRST
11 Vcc 2
12 Vcc 1
13 Vcc 2
14 Vcc 2
15 Reset
16
17 GND
18 LED DRV
19 DIPSW 1
20 DIPSW 2
21 DIPSW 3
22 DIPSW 4
23 VM LOCK
24 VMCCW (UP)
25 VMCW (DN)
26 S4
27 S3
28 S2
29 S1
30 CLC1
31 CLC2
32 SWC1
33 SWC2
34 CONT1
35 CONT2
36 CONT3
37 CHS1
38 CHS2
39 SLS1
40 SLS2
41 DISC
42 VCC2
43 SWS1
44 SWS2
45 SWS3
46 PWM
47
48 VADS
49
50 NC
51 GND
52 GND
53 LVDNS
54 LVUPS
55 RVDNS
56 RVUPS
57 VCC2
58 TXD2
59 RXD2
60 SCK2
61 TXD1
62 RXD1
63 Door
64 GND

Master Clock
9.8304MHz



When transmitting the data for Display : Ⓛ

(Asynchronous serial communication direction selector)

IFSEL1	IFSEL2	Mode
1	0	CDP-1 (Left)
0	1	CDP-2 (Right)
1	1	RXD2 – Not used TXD2 – Data for Display

Set the RS-422A driver to active when the transmission is performed.

This is the reset signal for IC401, IC402, IC406 and IC407 of the DGIF unit.

Indicator Ⓛ : ON

KDSB unit Dip SW (S5) Input

When VD Ⓜ Lock
(MCDR unit IC14,FET ARRAY
I_{AVE} ≒ 3.1A or more) is Ⓗ

(PWM drive for VD Ⓜ by IC14)

VMCCW	VMCW	VD Ⓜ
0	1	Transfer base UP (CCW)
1	0	Transfer base Down (CW)
1	1	Brake

KDSB unit S1-S4 Input

(CL Ⓜ drive by IC7)

CLC1	CLC2	CL Ⓜ
0	1	CCW
1	0	CW
1	1	Brake

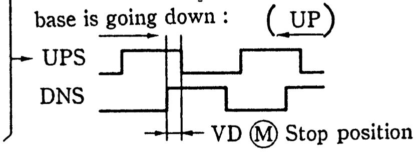
When Door close : Ⓛ

Asynchronous serial communication lines to/from the host.

CLOCK for Display drive

Asynchronous serial communication lines to /from CDP-1 and CDP-2.
(TXD2 is used for Display data transmission also.)

When the transfer base is going down :


(UP)
UPS
DNS
VD Ⓜ Stop position

VD servo speed command f=19.2kHz
Duty 1/31 – 31/31
(Min. speed – Max. speed)

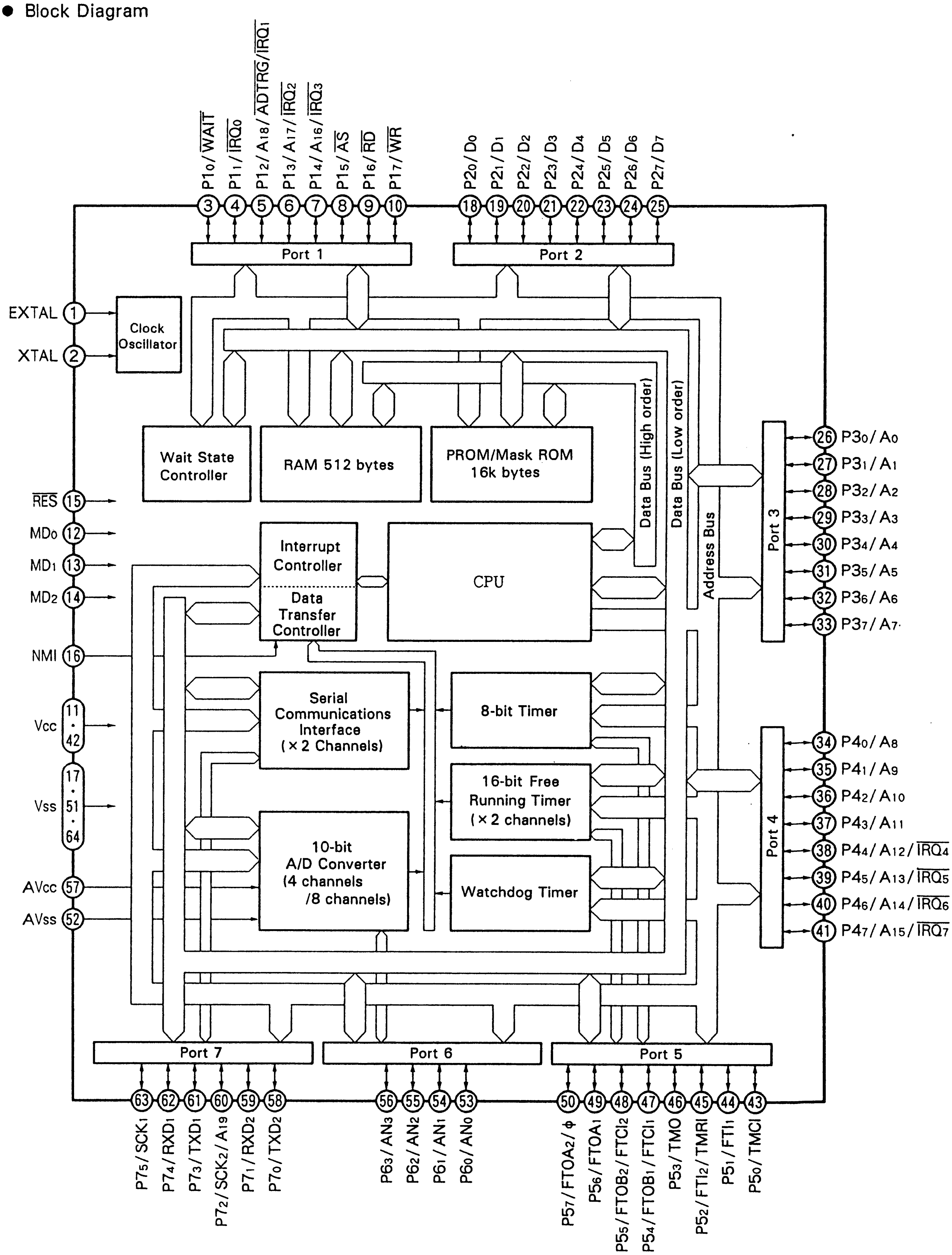
(SL Ⓜ and CH Ⓜ drive by IC6)

CONT 1	CONT 2	CONT 3	SL Ⓜ	CH Ⓜ
0	0	1	Back (CCW)	Stop
1	0	1	Forward (CW)	Stop
0	1	0	Stop	Close (CW)
1	1	0	Stop	Open (CCW)
1	1	1	Brake	Brake

(SW Ⓜ drive by IC5)

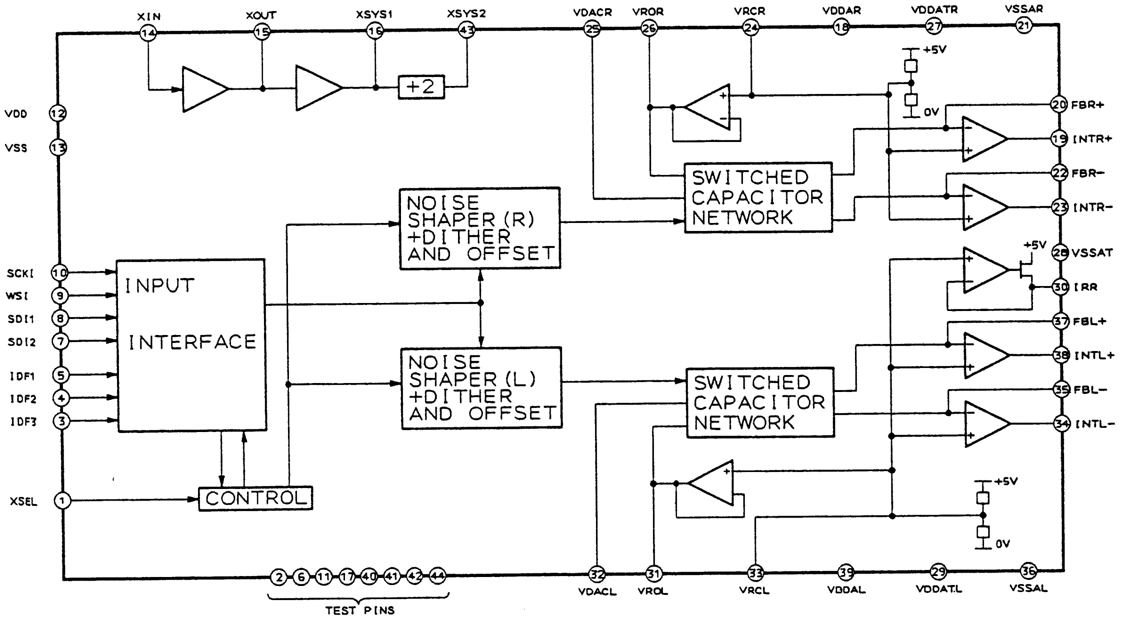
SWC1	SWC2	SW Ⓜ
0	1	Right (CCW)
1	0	Left (CW)
1	1	Brake

- Block Diagram


P10/WAIT
P11/IRQ0
P12/A18/ADTRG/IRQ1
P13/A17/IRQ2
P14/A16/IRQ3
P15/AS
P16/RD
P17/WR
3
4
5
6
7
8
9
10
P20/D0
P21/D1
P22/D2
P23/D3
P24/D4
P25/D5
P26/D6
P27/D7
18
19
20
21
22
23
24
25
Port 1
Port 2
EXTAL
1
XTAL
2
Clock Oscillator
Wait State Controller
RAM 512 bytes
PROM/Mask ROM 16k bytes
Data Bus (High order)
Data Bus (Low order)
Address Bus
Port 3
26 P30/A0
27 P31/A1
28 P32/A2
29 P33/A3
30 P34/A4
31 P35/A5
32 P36/A6
33 P37/A7
RES 15
MD0 12
MD1 13
MD2 14
NMI 16
Vcc 11 · 42
Vss 17 · 51 · 64
AVcc 57
AVss 52
Interrupt Controller
Data Transfer Controller
CPU
Serial Communications Interface (×2 Channels)
8-bit Timer
16-bit Free Running Timer (×2 channels)
10-bit A/D Converter (4 channels /8 channels)
Watchdog Timer
Port 4
34 P40/A8
35 P41/A9
36 P42/A10
37 P43/A11
38 P44/A12/IRQ4
39 P45/A13/IRQ5
40 P46/A14/IRQ6
41 P47/A15/IRQ7
Port 7
Port 6
Port 5
63
62
61
60
59
58
56
55
54
53
50
49
48
47
46
45
44
43
P75/SCK1
P74/RXD1
P73/TXD1
P72/SCK2/A19
P71/RXD2
P70/TXD2
P63/AN3
P62/AN2
P61/AN1
P60/AN0
P57/FTOA2/φ
P56/FTOA1
P55/FTOB2/FTCI2
P54/FTOB1/FTCI1
P53/TMO
P52/FTI2/TMRI
P51/FTI1
P50/TMCI

10.3 SAA7350 (DACB UNIT : IC522, IC523)

- **Stereo CMOS DAC**
- Block Diagram


XIN
XOUT
XSYS1
XSYS2
VDACR
VROR
VRCR
VDDAR
VDDATR
VSSAR
14
15
16
43
25
26
24
18
27
21
+2
+5V
0V
VDD
VSS
12
13
FBR+
INTR+
FBR−
INTR−
VSSAT
IRR
FBL+
INTL+
FBL−
INTL−
20
19
22
23
28
30
37
38
35
34
SWITCHED CAPACITOR NETWORK
NOISE SHAPER (R) +DITHER AND OFFSET
NOISE SHAPER (L) +DITHER AND OFFSET
INPUT INTERFACE
CONTROL
SCKI
WSI
SDI1
SDI2
IDF1
IDF2
IDF3
XSEL
10
9
8
7
5
4
3
1
2
6
11
17
40
41
42
44
TEST PINS
VDACL
VROL
VRCL
VDDAL
VDDATL
VSSAL
32
31
33
39
29
36

- Pin Function

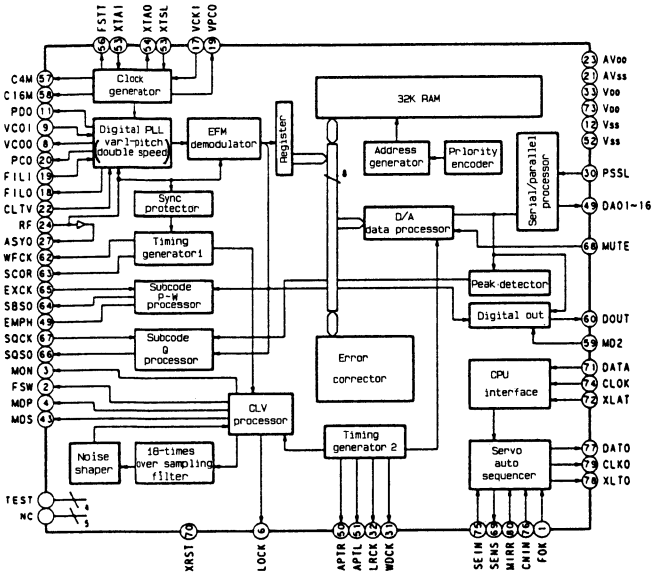
No.	Terminal Name	I/O	Description
1	XSEL		Crystal frequency select. This pin is used to select the master crystal frequency as follows : XSEL HIGH = 384fs XSEL LOW = 256fs This pin defaults to XSEL HIGH when not connected.
2	TEST6		Test 6 : This pin should be left open circuit.
3	IDF3	I	Input data format. These three pins determine the input format the device is to operate in (see functional description). If unconnected these pins will default HIGH (i. e. burst clock mode).
4	IDF2	I	
5	IDF1	I	
6	TEST4	–	Test 4 : This pin should be left open circuit
7	SDI2	I	Serial Data Input. Used in simultaneous mode only (for the right channel signal). When not used, this pin will be internally pulled high.
8	SDI1	I	Serial Data Input. This should be a 16, 18 or 20-bit linear 2's complement PCM signal. In simultaneous mode this pin is used for the left channel signal.
9	WSI	I	Serial input Word Select signal. Signifies whether data word is for the left or right channel. Can be either fs, 2fs, 4fs or 8fs where fs is the system sampling frequency. fs can lie between 16kHz and 53kHz.
10	SCKI	I	Bit clock input for the serial input interface.
11	TEST1	–	Test 1. This pin shouled be left open circuit.
12	VDD	–	+5V power supply for the digital section.
13	VSS	–	Ground connection for the digital section.

No.	Terminal Name	I/O	Description
14	XIN	I	Crystal Oscillator Input.
15	XOUT	O	Crystal Oscillator Output.
16	XSYS1	O	Buffered Oscillator Output.
17	TEST5	–	Test 5. In normal operation this pin should be tied LOW.
18	VDDAR		Analogue 5V supply for right channel.
19	INTR +	O	Output from the Right Positive switched-capacitor integrator. Input to differential op-amp.
20	FBR +		Feedback connection for the Right positive switched-capacitor integrator.
21	VSSAR		0V supply for right channel.
22	FBR –		Feedback connection for the Right Negative switched-capacitor integrator.
23	INTR –	O	Output from the Right Negative switched-capacitor integrator. Input to differential op-amp.
24	VRCR	I	High impedance voltage refernce for right channel inputs. Typically VDDAR/2.
25	VDACR		Reference Voltage Supply for Right channel DAC's. Normally this will be connected to VSS.
26	VROR	O	Right channel Voltage Reference Output. Typically VDDAR/2.
27	VDDATR		5V supply for right channel analogue timing.
28	VSSAT		0V supply for left and right channel analogue.
29	VDDATL		5V supply for left channel analogue timing.
30	IRR		24kΩ bias resistor connection for the reference current generator circuit.
31	VROL	O	Left channel Voltage Reference Output. Typically VDDAL/2.
32	VDACL		Reference Voltage Supply for Left channel DAC. Normally this will be connected to VSS.
33	VRCL	I	High impedance voltage reference for left channel inputs and for bias current generator. Typically VDDAL/2.
34	INTL –	O	Output from the Left Negative switched-capacitor integrator. Input to differential op-amp.
35	FBL –		Feedback connection for the Left Negative switched-capacitor integrator.
36	VSSAL		0V supply for left channel.
37	FBL +		Feedback connection for the Left Positive switched-capacitor integrator.
38	INTL +	O	Output from the Left Positive switched-capacitor integrator. Input to differential op-amp.
39	VDDAL		Analogue 5V supply for left channel.
40	TEST2	–	Test 2 : This pin should be left open circuit.
41	TEST3	–	Test 3 : This pin should be left open circuit.
42	TEST7	–	Test 7 : This pin should be left open circuit.
43	XSYS2	O	Output clock at a frequency of half the master clock frequency.
44	TEST8	–	Test 8 : This pin should be left open circuit.

10.4 CXD2500AQ (CONT UNIT : IC2)

● Decoder

● Block Diagram


FSTT
XTAI
XTAO
XTSL
VCKI
VPCO
56
53
54
53
17
19
C4M 57
C16M 58
PDO 11
VCOI 9
VCOO 8
PCO 20
FILI 19
FILO 18
CLTV 22
RF 24
ASYO 27
WFCK 62
SCOR 63
EXCK 65
SBSO 64
EMPH 49
SQCK 67
SQSO 66
MON 3
FSW 2
MDP 4
MDS 43
TEST
NC
4
5
Clock generator
Digital PLL vari-pitch double speed
EFM demodulator
Register
32K RAM
Address generator
Priority encoder
Serial/parallel processor
Sync protector
D/A data processor
Timing generator 1
Subcode P-W processor
Peak detector
Digital out
Subcode Q processor
Error corrector
CPU interface
CLV processor
Timing generator 2
Servo auto sequencer
Noise shaper
18-times over sampling filter
8
23 AVDD
21 AVss
33 VDD
73 VDD
12 Vss
52 Vss
30 PSSL
49 DA01~16
68 MUTE
60 DOUT
59 MD2
71 DATA
74 CLOK
72 XLAT
77 DATO
79 CLKO
78 XLTO
70 XRST
6 LOCK
50 APTR
51 APTL
32 LRCK
31 WDCK
75 SEIN
69 SENS
80 MIRR
76 CNIN
1 FOK

● Pin Function

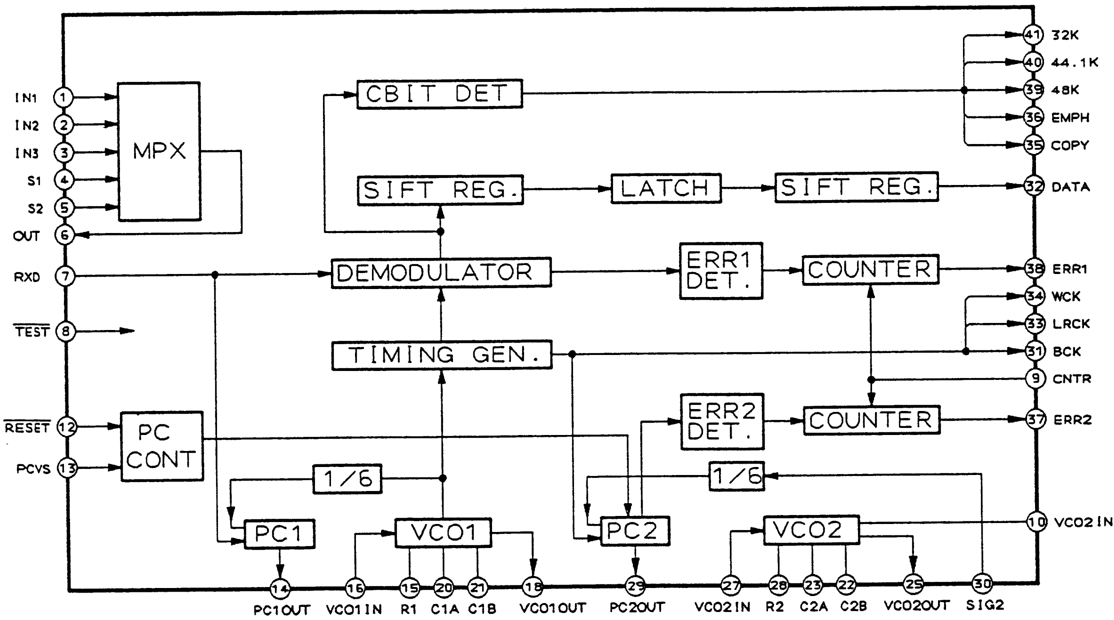
No.	Terminal Name	I/O	Description
1	FOK	I	Focus OK input terminal. Used for SENS output and the servo auto sequencer.
2	FSW	O	Output to switch the spindle motor output filter.
3	MON	O	ON/OFF control output of the spindle motor.
4	MDP	O	Servo control of the spindle motor.
5	MDS	O	Servo control of the spindle motor.
6	LOCK	O	Samples GFS at 460Hz and outputs "H" when GFS is in the H mode. Outputs "L" when receiving the L signal continuously eight times.
7	NC	–	——
8	VCO0	O	Oscillation circuit output for analog EFM PLL.
9	VCOI	I	Oscillation circuit input for analog EFM PLL. f_{LOCK} = 8.6436MHz
10	TEST	I	TEST terminal normal GND.
11	PD0	O	Charge pump output for analog EFM PLL.
12	Vss	–	GND
13	NC	–	——
14			
15			
16	VPCO	O	PLL charge pump output for variable pitch.
17	VCKI	I	Clock input from external VCO for variable pitch. f_{Ccenter} = 16.9344MHz
18	FILO	O	Master PLL (slave = digital PLL) filter output
19	FILI	I	Master PLL filter input
20	PCO	O	Master PLL charge pump output
21	AVss	–	Analog GND
22	CLTV	I	Master VCO control voltage input
23	AVDD	–	Analog power supply (+5V)
24	RF	I	EFM signal input
25	TEST2	I	Connect to GND.
26	TEST3		
27	ASYO	O	EFM full swing output (L = Vss, H = V_{DD})
28	TEST4	I	Connect to GND.
29	NC	–	——
30	PSSL	I	Audio data output mode switching input. Serial output by the L mode. Parallel output by the H mode.
31	WDCK	O	D/A interface for 48-bit slot. Word clock f = 2Fs.
32	LRCK	O	D/A interface for 48-bit slot. LR clock f = Fs.
33	V_{DD}	–	Power supply (+5V)
34	DA16	O	DA16 (MSB) output when PSSL = 1. Serial data (2s'COMP, MSB fast) of the 48-bit slot when PSSL = 0.
35	DA15	O	DA15 output when PSSL = 1. Bit clock of the 48-bit slot when PSSL = O.
36	DA14	O	DA14 output when PSSL = 1. Serial data (2s'COMP, LSB fast) of the 64-bit slot when PSSL = 0.
37	DA13	O	DA13 output when PSSL = 1. Bit clock of the 64-bit slot when PSSL = O.
38	DA12	O	DA12 output when PSSL = 1. LR clock of the 64-bit slot when PSSL = O.

No.	Terminal Name	I/O	Description
39	DA11	O	DA11 output when PSSL = 1. GTOP output when PSSL = 0.
40	DA10	O	DA10 output when PSSL = 1. XUGF output when PSSL = 0.
41	DA09	O	DA09 output when PSSL = 1. XPLCK output when PSSL = 0.
42	DA08	O	DA08 output when PSSL = 1. GFS output when PSSL = 0.
43	DA07	O	DA07 output when PSSL = 1. RFCK output when PSSL = 0.
44	DA06	O	DA06 output when PSSL = 1. C2P0 output when PSSL = 0.
45	DA05	O	DA05 output when PSSL = 1. XRAOF output when PSSL = 0.
46	DA04	O	DA04 output when PSSL = 1. MNT3 output when PSSL = 0.
47	DA03	0	DA03 output when PSSL = 1. MNT2 output when PSSL = 0.
48	DA02	O	DA02 output when PSSL = 1. MNT1 output when PSSL = 0.
49	DA01	O	DA01 output when PSSL = 1. MNT0 output when PSSL = 0.
50	APTR	O	Aperture compensation control output. H mode when Rch.
51	APTL	O	Aperture compensation control output. H mode when Lch.
52	Vss	–	GND
53	XTAI	I	16.9344MHz Xtal oscillation circuit input or 33.8688MHz.
54	XTAO	O	16.9344MHz Xtal oscillation circuit output.
55	XTSL	I	Xtal select input terminal. Changes to the L mode when Xtal is 16.9344MHz. Changes to the H mode when Xtal is 33.8688MHz.
56	FSTT	O	2/3 divider output of terminals 53 and 54. Does not change with the variable pitch.
57	C4M	O	4.2336MHz output. Changes simultaneously with the variable pitch.
58	C16M	O	16.9344MHz output. Changes simultaneously with the variable pitch.
59	MD2	I	Digital-out ON/OFF control. Is turned ON by the H signal. Is turned OFF by the L signal.
60	DOUT	O	Digital-out output terminal.
61	EMPH	O	Outputs "H" when emphasis exists in the playback disc. Outputs "L" when no emphasis exists in the playback disc.
62	WFCK	O	WFCK (Write Frame Clock) output.
63	SCOR	O	Outputs "H" when the system detects either subcode synchro S0 or S1.
64	SBSO	O	Sub P – W serial output.
65	EXCK	I	Clock input for SBSO lead out.
66	SQSO	O	SubQ 80-bit and PCM peak. Level data 16-bit output.
67	SQCK	I	Clock input for SQSO lead out.
68	MUTE	I	Is muted by the H signal. Muting is canceled by the L signal.
69	SENS	–	SENS output. Outputs to CPU.
70	XRST	I	System reset. Resets by the L signal.
71	DATA	I	Serial data input from CPU.
72	XLAT	I	Latch input from CPU. Latches serial data at the trailing edge.
73	VDD	–	Power supply (+5V)
74	CLOK	I	Serial data transfer clock input from CPU.
75	SEIN	I	SENSE input from SSP.
76	CNIN	I	Track jumps counting signal input
77	DATO	O	Serial data output to SSP.
78	XLTO	O	Serial data latch output to SSP. Latches serial data at the trailing edge.
79	CLKO	O	Serial data transfer clock output to SSP.
80	MIRR	I	Mirror signal input. For a jump more than 128 tracks using the auto sequencer.

10.5 PD0037 (DGIF UNIT : IC401, IC402)

● Digital Interface Receiver

● Block Diagram


IN1 1
IN2 2
IN3 3
S1 4
S2 5
OUT 6
RXD 7
TEST 8
RESET 12
PCVS 13
MPX
CBIT DET
SIFT REG.
LATCH
SIFT REG.
DEMODULATOR
ERR1 DET.
COUNTER
TIMING GEN.
ERR2 DET.
COUNTER
PC CONT
1/6
1/6
PC1
VCO1
PC2
VCO2
41 32K
40 44.1K
39 48K
36 EMPH
35 COPY
32 DATA
38 ERR1
34 WCK
33 LRCK
31 BCK
9 CNTR
37 ERR2
10 VCO2 INH
14 PC1OUT
16 VCO1 IN
15 R1
20 C1A
21 C1B
18 VCO1OUT
29 PC2OUT
27 VCO2 IN
28 R2
23 C2A
22 C2B
25 VCO2OUT
30 SIG2

● Pin Function

No.	Terminal Name	I/O	Description	
1	IN1	I	Data input 1	Digital audio data input in the EIAJ format. (TTL level)
2	IN2	I	Data input 2	
3	IN3	I	Data input 3	
4	S1	I	Input selector 1 (TTL level)	
5	S2	I	Input selector 2 (TTL level)	
6	OUT	O	MPX output of data.	
7	RXD	I	Data input. Normally connect to OUT. (CMOS level)	
8	$\overline{\text{TEST}}$	I	Test mode input. Normally fixed to "H." Contains pull-up resistance. (TTL level)	
9	CNTR	I	Counter clock input for setting output time for ERR1 and ERR2. (CMOS level)	
10	VCO2 INH	I	For stopping VCO2 oscillation. Stops oscillation by the "H" signal. (TTL level)	
11	VSS	–	Logic VSS.	
12	$\overline{\text{RESET}}$	I	Power ON reset input. (CMOS level)	
13	PCVS	I	Input for setting VCO1 and VCO2 free-running frequency.	

No.	Terminal Name	I/O	Description
14	PC1 OUT	O	Phase comparator 1 output.
15	R1	–	Terminal to connect the VCO1 adjusting resistance.
16	VCO1IN	I	VCO1 control voltage input.
17	VDD1	–	VCO1 VDD
18	VCO1 OUT	O	VCO1 output (384fs)
19	VSS1	–	VCO1 VSS
20	C1 A	–	VCO1 adjusting capacity connection terminal.
21	C1 B	–	
22	C2 B	–	VCO2 adjusting capacity connection terminal.
23	C2 A	–	
24	VSS2	–	VCO2 VSS
25	VCO2 OUT	O	VCO2 output (384fs)
26	VDD2	–	VCO2 VDD
27	VCO2 IN	I	VCO2 control voltage input.

No.	Terminal Name	I/O	Description
28	R2	–	Terminal to connect the VCO2 adjusting resistance.
29	PC2 OUT	O	Phase comparator 2 output.
30	SIG2	I	V input of the phase comparator 2. Normally connect to VCO2 OUT. (CMOS level)
31	BCK	O	Demodulation data bit clock output.
32	DATA	O	Demodulation audio data output.
33	LRCK	O	Demodulation data L/R channel output. (H = L channel)
34	WCK	O	Demodulation data word clock output.
35	COPY	O	COPY information output. Enables copy by the "H" signal.
36	EMPH	O	Emphasis information output. (H = Emphasis exists.)
37	ERR2	O	2nd PLL UNLOCK output. (H = UNLOCK)

No.	Terminal Name	I/O	Description
38	ERR1	O	1st PLL data reading error output. (H = Error detected.)
39	48K	O	Sampling frequency information output. Open drain for the LED driver. "L" active.
40	44.1K		
41	32K		
42	VDD	–	Logic VDD.

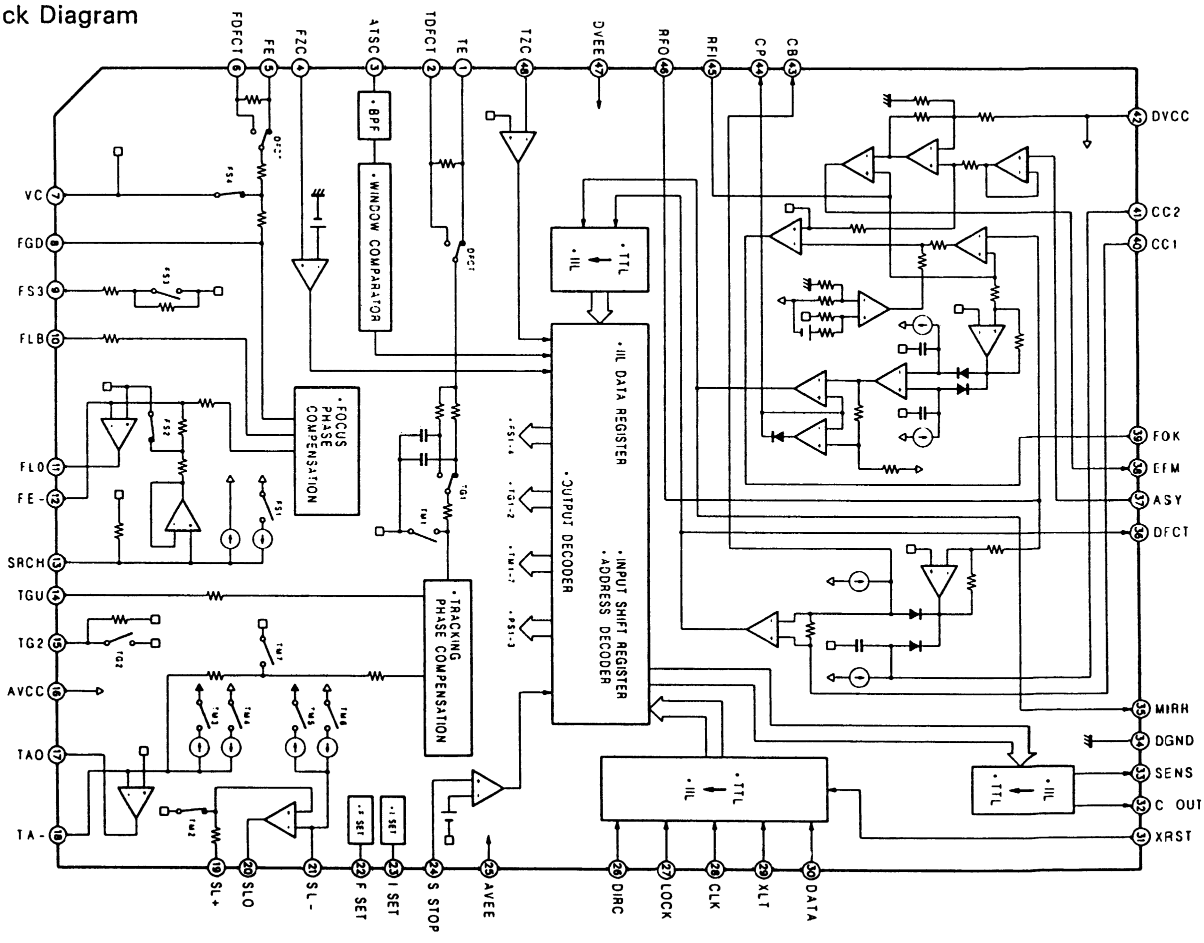
- **Input Selector**

S2	S1	OUT
L	L	L
L	H	IN1
H	L	IN2
H	H	IN3

Terminals not used for IN1 to IN3 are fixed either in the "H" or "L" mode.

10.6 CXA1372S (CONT UNIT : IC4)

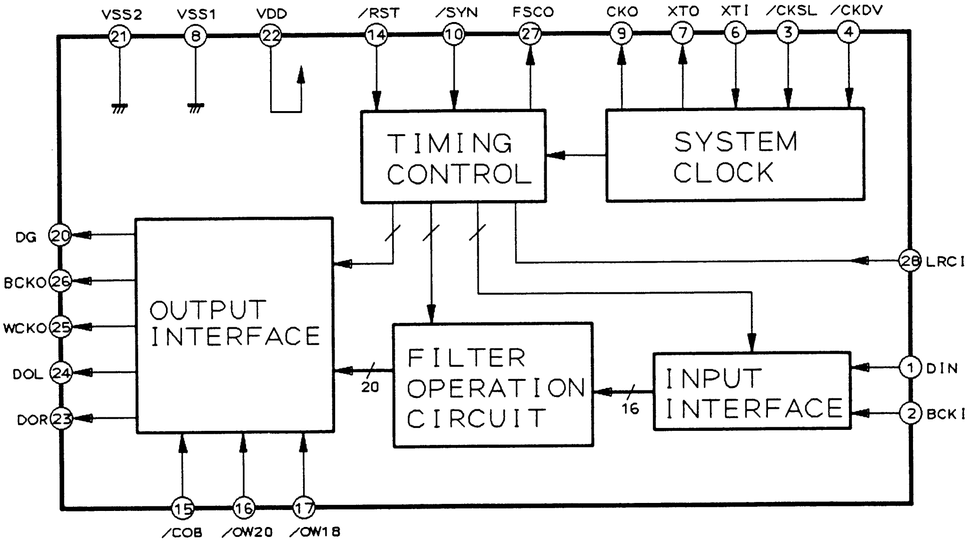
- Block Diagram


FDFCT 6
FE 5
FZC 4
ATSC 3
TDFCT 2
TE 1
TZC 48
DVEE 47
RFO 46
RFI 45
CP 44
CB 43
DVCC 42
CC2 41
CC1 40
FOK 39
EFM 38
ASY 37
DFCT 36
MIRR 35
DGND 34
SENS 33
C OUT 32
XRST 31
VC 7
FGD 8
FS3 9
FLB 10
FLO 11
FE- 12
SRCH 13
TGU 14
TG2 15
AVCC 16
TAO 17
TA- 18
19 SL+
20 SLO
21 SL-
22 F SET
23 I SET
24 S STOP
25 AVEE
26 DIRC
27 LOCK
28 CLK
29 XLT
30 DATA
BPF
WINDOW COMPARATOR
TTL
IIL
IIL DATA REGISTER
INPUT SHIFT REGISTER
ADDRESS DECODER
OUTPUT DECODER
FOCUS PHASE COMPENSATION
TRACKING PHASE COMPENSATION
F SET
I SET
DFCT
FS1
FS2
FS3
FS4
TG1
TG2
TM1
TM2
TM3
TM4
TM5
TM6
TM7

10.7 SM5813AP (DACB : IC513)

● Digital Filter

- Block Diagram


VSS2
VSS1
VDD
/RST
/SYN
FSCO
CKO
XTO
XTI
/CKSL
/CKDV
21
8
22
14
10
27
9
7
6
3
4
TIMING CONTROL
SYSTEM CLOCK
DG 20
BCKO 26
WCKO 25
DOL 24
DOR 23
OUTPUT INTERFACE
FILTER OPERATION CIRCUIT
INPUT INTERFACE
20
16
28 LRCI
1 DIN
2 BCKI
15
16
17
/COB
/OW20
/OW18

- Pin Function

No.	Terminal Name	I/O	Description
1	DIN	I	Input data
2	BCKI	I	Bit clock of input data.
3	/CKSL	I	Selects the input frequency of the XTI terminal. (See the description of the Pin6 XTI terminal.)
4	/CKDV	I	
5	(NC)	–	——
6	XTI	I	Oscillator input terminal. (192fs : /CKSL = H, /CKDV = H) (384fs : /CKSL = H, /CKDV = L) (256fs : /CKSL = L, /CKDV = H) (512fs : /CKSL = L, /CKDV = L)
7	XTO	O	Oscillator output terminal.
8	VSS1	–	GND terminal 1
9	CKO	O	Oscillator output clock (frequency is the same as with the XTI terminal).
10	/SYN	I	Selects between the jitter-free mode and the forced synchronous mode. H = Jitter-free mode L = Forced synchronous mode
11	(NC)	–	——
12			
13			
14	/RST	I	System reset. H = Normal operation L = System reset

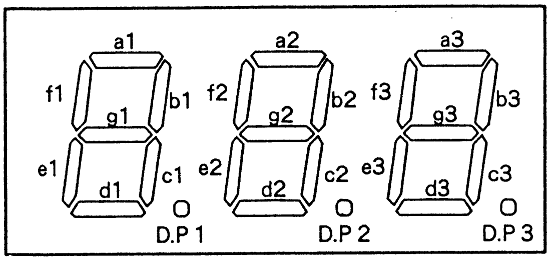
<table>
<tr><th>No.</th><th>Terminal Name</th><th>I/O</th><th>Description</th></tr>
<tr><td>15</td><td>/COB</td><td>I</td><td>Selects between a complement of 2 and COB.
H = Complement of 2 L = COB</td></tr>
<tr><td>16</td><td>/OW20</td><td>I</td><td rowspan="2">Selects the output bits.
<table>
<tr><td>OUTPUT BIT</td><td>16</td><td>18</td><td>20</td></tr>
<tr><td>/OW18</td><td>H</td><td>L</td><td>H</td></tr>
<tr><td>/OW20</td><td>H</td><td>H</td><td>L</td></tr>
</table></td></tr>
<tr><td>17</td><td>/OW18</td><td>I</td></tr>
<tr><td>18</td><td rowspan="2">(NC)</td><td rowspan="2">–</td><td rowspan="2">——</td></tr>
<tr><td>19</td></tr>
<tr><td>20</td><td>DG</td><td>O</td><td>Deglitch control clock</td></tr>
<tr><td>21</td><td>VSS2</td><td>–</td><td>GND terminal 2</td></tr>
<tr><td>22</td><td>VDD</td><td>–</td><td>Power supply terminal (5V)</td></tr>
<tr><td>23</td><td>DOR</td><td>O</td><td>Rch octuple over-sampling output data</td></tr>
<tr><td>24</td><td>DOL</td><td>O</td><td>Lch octuple over-sampling output data</td></tr>
<tr><td>25</td><td>WCKO</td><td>O</td><td>Word clock of output data</td></tr>
<tr><td>26</td><td>BCKO</td><td>O</td><td>Bit clock of output data</td></tr>
<tr><td>27</td><td>FSCO</td><td>O</td><td>Internal operation timing clock for fs cycle.</td></tr>
<tr><td>28</td><td>LRCI</td><td>I</td><td>Sample rate (fs) clock of input data
H = Lch L = Rch</td></tr>
</table>

Note : "fs" stands for the sample frequency of input data.

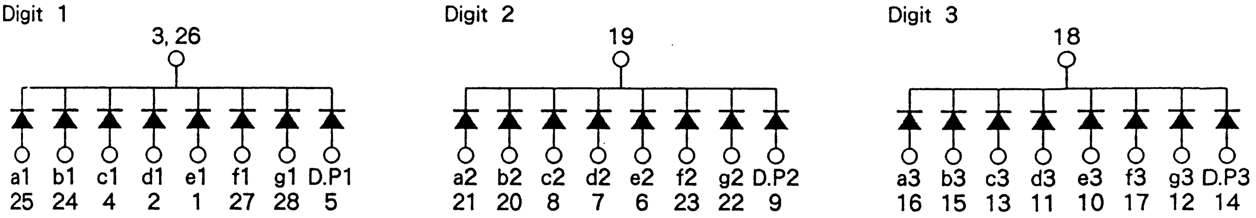
10.8 LB – 603VP (KDSB UNIT : D300)

● LED

● Pin Assignment


a1
a2
a3
f1
b1
f2
b2
f3
b3
g1
g2
g3
e1
c1
e2
c2
e3
c3
d1
d2
d3
D.P 1
D.P 2
D.P 3

● Schematic Diagram


Digit 1
3, 26
a1 b1 c1 d1 e1 f1 g1 D.P1
25 24 4 2 1 27 28 5
Digit 2
19
a2 b2 c2 d2 e2 f2 g2 D.P2
21 20 8 7 6 23 22 9
Digit 3
18
a3 b3 c3 d3 e3 f3 g3 D.P3
16 15 13 11 10 17 12 14

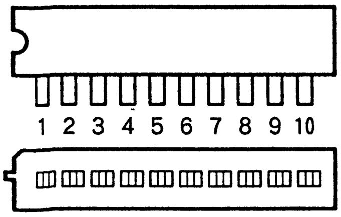
● Pin Function

Pin	Address	Pin	Address
1	Segment " e1 " Anode	15	Segment " b3 " Anode
2	Segment " d1 " Anode	16	Segment " a3 " Anode
3	Digit. 1 Common Cathode	17	Segment " f3 " Anode
4	Segment " c1 " Anode	18	Digit. 3 Common Cathode
5	D. P 1 Anode	19	Digit. 2 Common Cathode
6	Segment " e2 " Anode	20	Segment " b2 " Anode
7	Segment " d2 " Anode	21	Segment " a2 " Anode
8	Segment " c2 " Anode	22	Segment " g2 " Anode
9	D. P 2 Anode	23	Segment " f2 " Anode
10	Segment " e3 " Anode	24	Segment " b1 " Anode
11	Segment " d3 " Anode	25	Segment " a1 " Anode
12	Segment " g3 " Anode	26	Digit. 1 Common Cathode
13	Segment " c3 " Anode	27	Segment " f1 " Anode
14	D. P 3 Anode	28	Segment " g1 " Anode

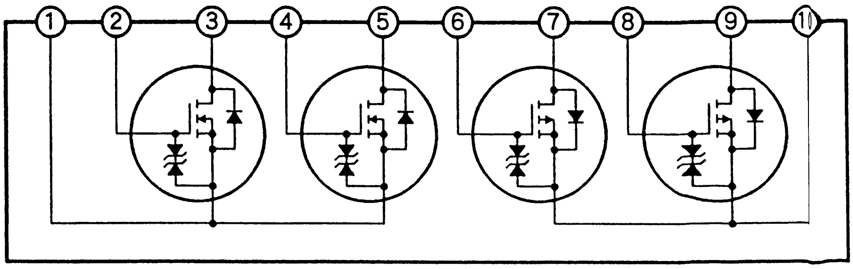
10.9 4AM12 (MCDR UNIT : IC14)

● High-speed Power Switching

● Pin Assignment

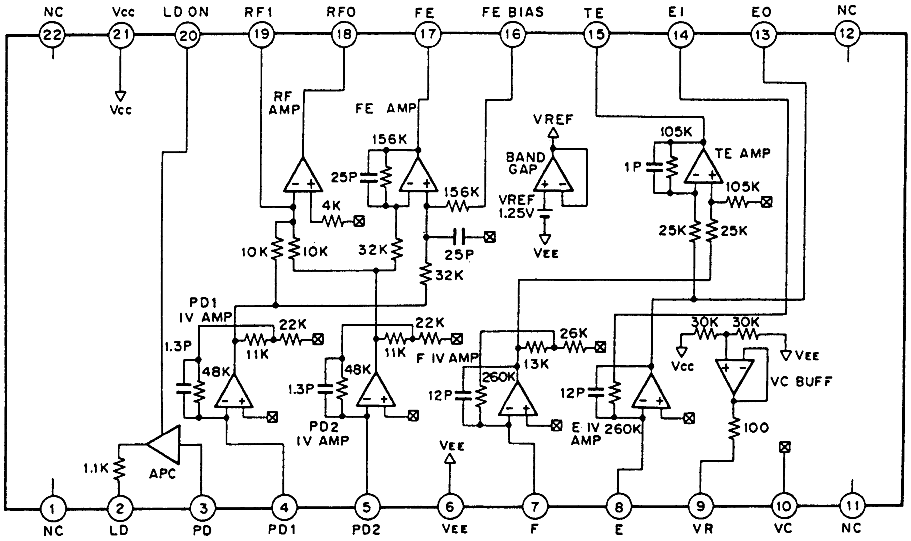

1 2 3 4 5 6 7 8 9 10

● Block Diagram


①
②
③
④
⑤
⑥
⑦
⑧
⑨
⑩

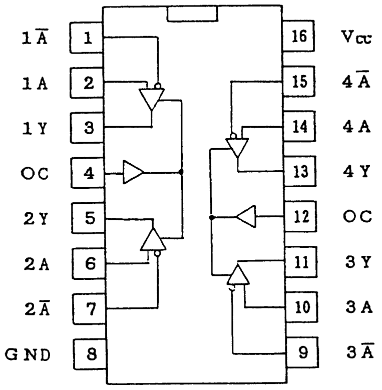
10.10 CXA1471S (CONT UNIT : IC1)

- **RF Amp**
- Block Diagram


NC 22
Vcc 21
LD ON 20
RF1 19
RFO 18
FE 17
FE BIAS 16
TE 15
EI 14
EO 13
NC 12
Vcc
RF AMP
FE AMP
156K
25P
4K
156K
VREF
BAND GAP
VREF 1.25V
VEE
105K
TE AMP
1P
105K
25K
25K
10K
10K
32K
25P
32K
PD1 IV AMP
22K
11K
1.3P
48K
22K
11K
F IV AMP
26K
13K
260K
12P
12P
260K
E IV AMP
30K
30K
Vcc
VEE
VC BUFF
100
1.3P
48K
PD2 IV AMP
1.1K
APC
VEE
1 NC
2 LD
3 PD
4 PD1
5 PD2
6 VEE
7 F
8 E
9 VR
10 VC
11 NC

10.11 M75175P (RSIF UNIT : IC302)

- **Quadruple Differential Line Receiver**
- Pin Assignment


1Ā 1
1A 2
1Y 3
OC 4
2Y 5
2A 6
2Ā 7
GND 8
16 Vcc
15 4Ā
14 4A
13 4Y
12 OC
11 3Y
10 3A
9 3Ā

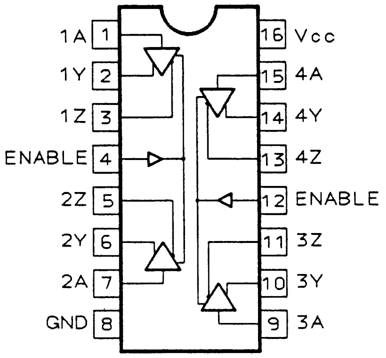
- Function Table

Input			Output
A	Ā	OC	Y
$V_{ID} > V_{TH}$		H	H
$V_{TL} < V_{ID} < V_{TH}$		H	*
$V_{ID} < V_{TL}$		H	L
X		L	Z

Note)
VID : (Voltage applied to A) − (Voltage applied to A)
VTH : 0.2V
VTL : −0.2V
X : Either "H" or "L."
* : State of Y is not defined.
Z : Indicates high impedance.

10.12 SN75174N (RSIF UNIT IC303)

- **Line Driver**
- Pin Assignment


1A 1
1Y 2
1Z 3
ENABLE 4
2Z 5
2Y 6
2A 7
GND 8
16 Vcc
15 4A
14 4Y
13 4Z
12 ENABLE
11 3Z
10 3Y
9 3A

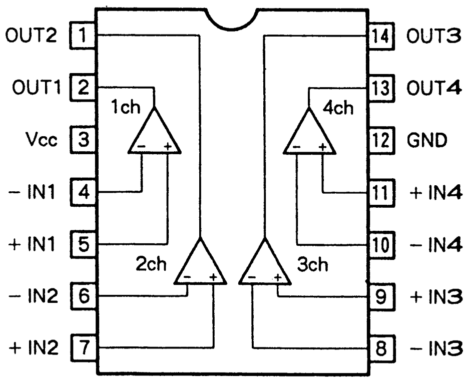
- Truth Table

INPUT	ENABLE	OUTPUTS	
		Y	Z
H	H	H	L
L	H	L	H
X	L	Z	Z

H = TTL high level.
L = TTL low level.
X = irrelevant.
Z = high impodance(off)

10.13 BA10339 (MCDR UNIT : IC12)

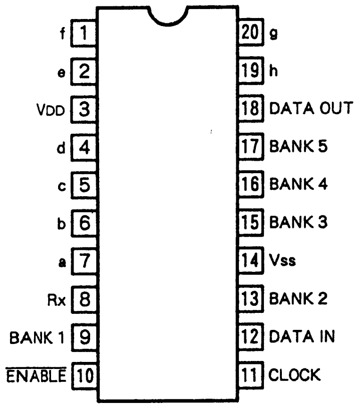
- **Quad Comparator**
- Block Diagram


OUT2 1
OUT1 2
Vcc 3
− IN1 4
+ IN1 5
− IN2 6
+ IN2 7
14 OUT3
13 OUT4
12 GND
11 + IN4
10 − IN4
9 + IN3
8 − IN3
1ch
2ch
3ch
4ch

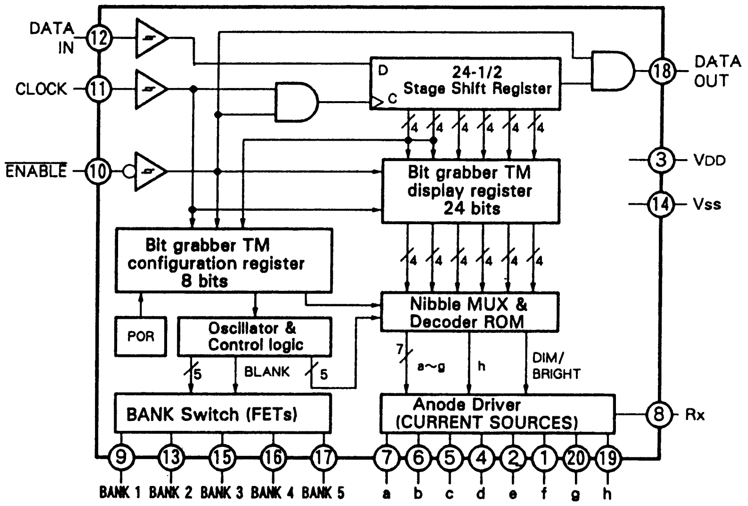
10.14 MC14489P (KDSB UNIT : IC300)

● Multifunction OED Display/Lamp Driver CMOS

- Pin Assignment


f 1
e 2
VDD 3
d 4
c 5
b 6
a 7
Rx 8
BANK 1 9
ENABLE 10
20 g
19 h
18 DATA OUT
17 BANK 5
16 BANK 4
15 BANK 3
14 Vss
13 BANK 2
12 DATA IN
11 CLOCK

- Block Diagram


DATA IN 12
CLOCK 11
ENABLE 10
D
C
24-1/2 Stage Shift Register
DATA OUT 18
4
Bit grabber TM display register 24 bits
3 VDD
14 Vss
Bit grabber TM configuration register 8 bits
POR
Oscillator & Control logic
Nibble MUX & Decoder ROM
7
a~g
h
DIM/ BRIGHT
5
BLANK
5
BANK Switch (FETs)
Anode Driver (CURRENT SOURCES)
8 Rx
9 13 15 16 17
BANK 1 BANK 2 BANK 3 BANK 4 BANK 5
7 6 5 4 2 1 20 19
a b c d e f g h

10.15 PD0140B (CONT UNIT : IC9)

● CDP System Control

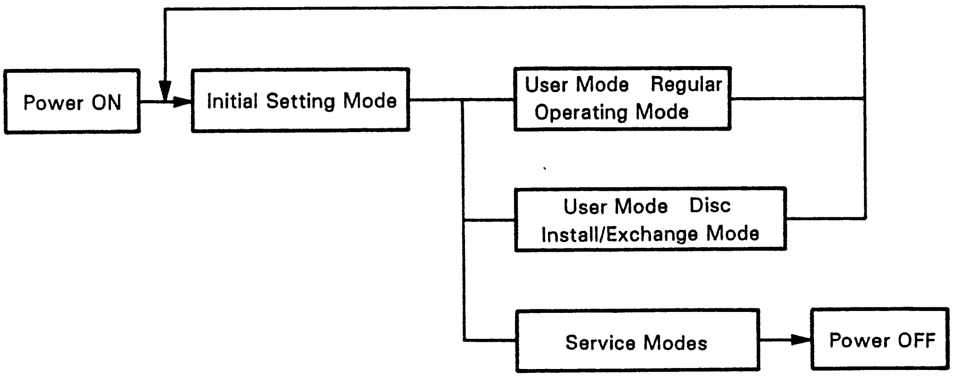
- Pin Function

No.	Terminal Name	I/O	Description
1	Vcc	O	+5V
2	–	O	NC
3	XLT	O	Latch signal output for communication with CXD2500AQ.
4	LDON	O	Laser diode control output H : Diode ON
5	MUTEG	O	Mute control output H : Mute ON
6–10	–	O	NC
11	CLK	O	Clock signal output for communication with CXD2500AQ.
12	DATA	O	Data transmission to CXD2500AQ.
13	SUBQ	I	Subcode input
14	SW	I	External/Remote control input H : Remote control input
15–19	–	O	NC
20	TxD	O	Asynchronous serial communications with system micro-computer.
21	RxD	I	
22	SENS	I	SENS input from CXD2500AQ
23–25	–	O	NC
26	SCOR	I	Subcode ready signal input H : Ready
27	CNVss		GND
28	RESET		
29	XIN		Master clock 9.8304MHz
30	XOUT		
31	–	O	NC
32	Vss		GND
33	INSD	I	Inside switch input L : Inside
34	GFS	I	Spindle monitor input H : OK
35	FOK	I	Focus monitor input H : OK
36–40	–	I	GND
41–48	–	O	NC
49–56	–	O	
57–61	–	O	
62	ALAT	O	Latch signal output to the digital attenuator
63	ADAT	O	Data output to the digital attenuator
64	ACLK	O	Communication clock signal output to the digital attenuator

11. SERVICE MODE

1. OPERATION MODE

The operation mode is devided into two types, User mode and Service mode.
Mode switching process is in the Initial setting mode, where the set reads which buttons are pressed and which bits of a DIP switch are set.


Power ON
Initial Setting Mode
User Mode Regular Operating Mode
User Mode Disc Install/Exchange Mode
Service Modes
Power OFF

The user mode has the regular operation mode, which is controlled by the host computer, and the disc install and disc exchange modes. A restart can be performed from the initial setting mode by opening the door, switching the DIP switch setting, and closing the door because the mode settings are determined by the DIP switch setting.
For details, see the instruction manual.

■ Indicator

In addition to the ON and OFF conditions, the lamp can also flash rapidly or slowly. Always observe the indicator during operation. Because the meaning of the indicator is very important.

- Fast Flashing

The lamp flashes quickly when the door is open to indicate that it must be closed. For example, when the manual mode is entered, a request to close the door is indicated when the initialization is not completed. When this occurs, a start up operation must be performed after the completing the initialization. In the disc install/exchange mode, a request is issued to close the door because the mechanism operation cannot be performed when the door is open.

When the door is closed, a request is made to open the door. When a series of operation is completed in the disc install/exchange mode and the next operation is necessary, a request is made to open the door. If an error occurs, a request is made to open the door and display the error message. And in that case, the lamp continues to flash rapidly after the door is closed.

- Slow Flashing

The lamp flashes slowly to indicate that the mechanism is operating. Be careful not to open the door by mistake when the mechanism is operating. This condition is also seen while the initial setting mode is executed.

- OFF Condition

This lamp indicates that the door is closed. (User mode)

- ON Condition

This lamp lights to indicate that the door is open (User mode). If the service mode is entered, the indicator lamp stays ON even when the door is closed. This enables external verification that the door was closed by mistake when the service mode is entered.

2. SERVICE MODE

The following eight modes compose the service mode.

① SUPER MANUAL MODE
② MANUAL MODE
③ ERROR HISTORY REFERENCE MODE
④ PLAYER ADDRESS SETTING MODE
⑤ COUNTER READ MODE
⑥ LOOP BACK TEST MODE
⑦ SOFTWARE VERSION REFERENCE MODE
⑧ SCREENING MODE

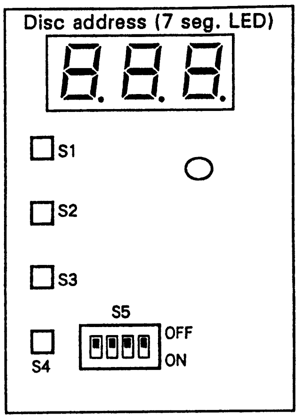


Fig. 1 KDSB unit

The tactile switches (S1 to S4) in the KDSB unit, the dip switches (S5) and the power switch are used to enter the service mode. Turn on the power while pressing some tactile switches. The various independent operations are performed depending on the combined pattern of switches that are pressed (except in the screening mode). When shifting to other modes, turn the power switch OFF one time and then turn it ON again. The operation will not shift to another mode if the power switch is not turned ON again. (Refer to Fig. 1 and 2.)

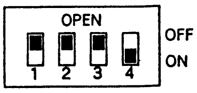
No.	Mode	How to Enter Each Service Mode.
1	SUPER MANUAL MODE	Press ➔ ⬚ S1 ➔ ⬚ S2 ➔ ⬚ S3 ➔ ⬚ S4 + Power Switch ON.
2	MANUAL MODE	Press ➔ ⬚ S1 ➔ ⬚ S2 ☐ S3 ☐ S4 + Power Switch ON.
3	ERROR HISTORY REFERENCE MODE	Press ☐ S1 ☐ S2 ➔ ⬚ S3 ➔ ⬚ S4 + Power Switch ON.
4	PLAYER ADDRESS SETTING MODE	Press ➔ ⬚ S1 ☐ S2 ➔ ⬚ S3 ☐ S4 + Power Switch ON.
5	COUNTER READ MODE	Press ☐ S1 ➔ ⬚ S2 ☐ S3 ➔ ⬚ S4 + Power Switch ON.
6	LOOP BACK TEST MODE	Press ☐ S1 ➔ ⬚ S2 ➔ ⬚ S3 ☐ S4 + Power Switch ON.
7	SOFTWARE VERSION REFERENCE MODE	Press ➔ ⬚ S1 ☐ S2 ☐ S3 ➔ ⬚ S4 + Power Switch ON.
8	SCREENING MODE	 + Power Switch ON.

Fig. 2

Precaution

The user mode of the CAC-V3000 is designed so the mechanism operation cannot be performed when the door is opened to ensure user safety. However, in the service mode, the mechanism operates when the door is opened because the mechanism control is operated by the operation buttons inside the door. Read this manual adequately to understand the operations and perform them correctly.

The screening mode can only operate if the door is opened or closed when DIP switch number 4 is ON.

The screening mode is a provisional function that is used in manufacturing processing and should not be used by the regular user.

The mechanism operates in the following service modes.

- Manual mode
- Super manual mode
- Screening mode

① Super Manual Mode

It is possible to monitor the whole sensors on the operating mechanism. Those are seen on the LEDs. And also each motor that drives the mechanism is able to control individually.

1) Start-up Operation

While pressing all switches S1 to S4, turn the power switch ON.

2) Sensor ON/OFF Verification

Each segment of the seven-segment LED are assigned to each sensor. See Fig. 3 and Table 2 to 8.

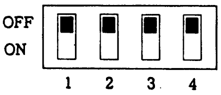
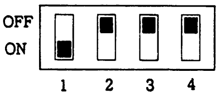
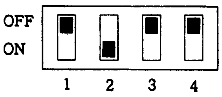
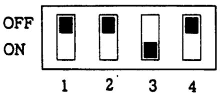
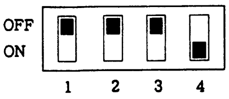
※ The logical levels of each segment are as follows.

Segment lights : 1
Segment goes off : 0
LED brightness decreases : CLS3 = 0
LED brightness increases : CLS3 = 1

3) Drive Motor Select

Select the drive motor by setting the DIP switch's bit. (Refer to Table 1)

Switches S1 and S2 are used to drive the motor. The motor is driven while the switch is pressed without any relation to the sensor value.

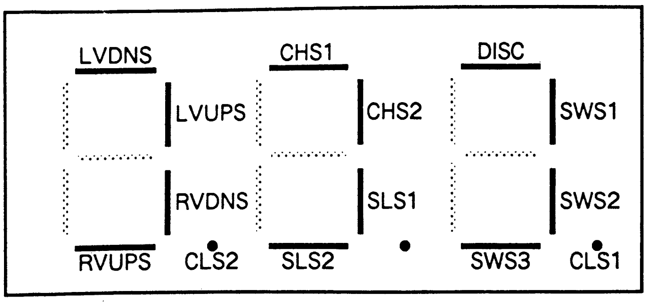
Switch	Motor and Direction of the Operation				
	Vertical Motor	Clamp Motor	Swing Motor	Chuck Motor	Slide Motor
S1	Upward	Clockwise direction	Right	Close	Forward
S2	Downward	Counterclockwise direction	Left	Open	Backward
S5	 OFF ON 1 2 3 4 All switches : OFF	 OFF ON 1 2 3 4 S5-1 only : ON	 OFF ON 1 2 3 4 S5-2 only : ON	 OFF ON 1 2 3 4 S5-3 only : ON	 OFF ON 1 2 3 4 S5-4 only : ON

Note :

To protect the mechanism, the motor does not operate under the following conditions.

- *Chuck operation is not possible if the slide mechanism is in the middle position.*
- *The slide mechanism cannot extend if the swing arm is not stopped in the right or left position.*
- *Swing operation is not possible if the slide mechanism has not retracted.*

Table 1



Note : CLS3 determines the brightness of the entire LEDs.

LVDNS LVUPS	Left vertical position detection sensor (See Table 2)
RVDNS RVUPS	Right vertical position detection sensor (See Table 3)
CHS1 CHS2	Chuck motor end detection switch (See Table 5)
SLS1 SLS2	Slide motor end detection switch (See Table 4)
DISC	: Disc presence detection switch (See Table 6)
SWS1 SWS2 SWS3	Swing motor stop position detection switch (See Table 7)
CLS1 CLS2 CLS3	Clamp motor stop position detection switch

Fig. 3 LED Light Position

Left Vertical Position Detection Sensor Value			
LVUPS	0	1	1
LVDNS	1	1	0
Mechanism operation	Lower	Stop position	Raise

Table 2

Right Vertical Position Detection Sensor Value			
RVUPS	0	1	1
RVDNS	1	1	0
Mechanism operation	Lower	Stop position	Raise

Table 3

Slide Motor End Detection Sensor Value			
SLS 1	0	1	1
SLS 2	1	1	0
Mechanism position	Retract		Extend

Table 4

Chuck Motor End Detection Sensor Value			
CHS 1	0	1	1
CHS 2	1	1	0
Mechanism position	Open		Close

Table 5

CD Presence Detection Switch		
DISC	0	1
	Loaded	Not loaded.

Table 6

Swing Motor Stop Position Detection Switch Value					
SWS 1	1	0	0	1	1
SWS 2	1	1	0	0	0
SWS 3	1	1	1	1	0
Mechanism position	Left end		Center		Right end

Table 7

Clamp Motor Stop Position Detection Switch Value									
CLS 1	1	0	0	0	0	1	1	1	1
CLS 2	1	1	0	0	1	1	0	0	1
CLS 3	1	1	1	0	0	0	0	1	1
Clamper (left) Clamper (right)	OPEN OPEN		CLOSE OPEN		CLOSE CLOSE		OPEN CLOSE		OPEN OPEN
Motor rotation direction	⇦ Counterclockwise direction						Clockwise direction ⇨		

Table 8

② Manual Mode

1) Start-up Operation

While pressing both S1 and S2, turn the power switch ON.

If the manual mode is entered, the LED usualy displays [n1]. However, a sequence number is displayed when the set starts just after a malfunction has occurred.

※ In some cases, a request is made for the initial setting to ensure safe operation. Close the door if the indicator flashes rapidly. The lamp will flash slowly and operation will be executed same as the initial settings. The indicator lamp goes off when the initial setting is completed. After the power is shut off, open the door, and turn the power on while pressing switches S1 and S2 again.

2) Usage

- The disc setup operations can be executed for each step from n1 to n14 for S3 (Refer to Tables 9 and 10). The transfer base vertical operation is performed by switches S1 and S2.
- The disc return operation is executed for each step from r14 to r1 for switch S4. (Refer to Tables 9 and 10). The transfer base vertical operation is performed by switches S1 and S2. If switch S4 is pressed to return the CD to the incorrect rack in [r7], the correct address is displayed on the LED.
- S1, S2 can directly control the drive motor at each step. (see Table 10)
- The selection of the CD player and the side of the rack can be performed by bit 1 of S5 (DIP switches). If the right side is selected the period next to the numeral LED lights. (Refer to Fig. 4.) But this selection is only possible at sequence numbers [1], [7] and [14].

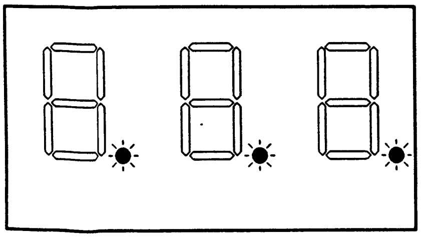
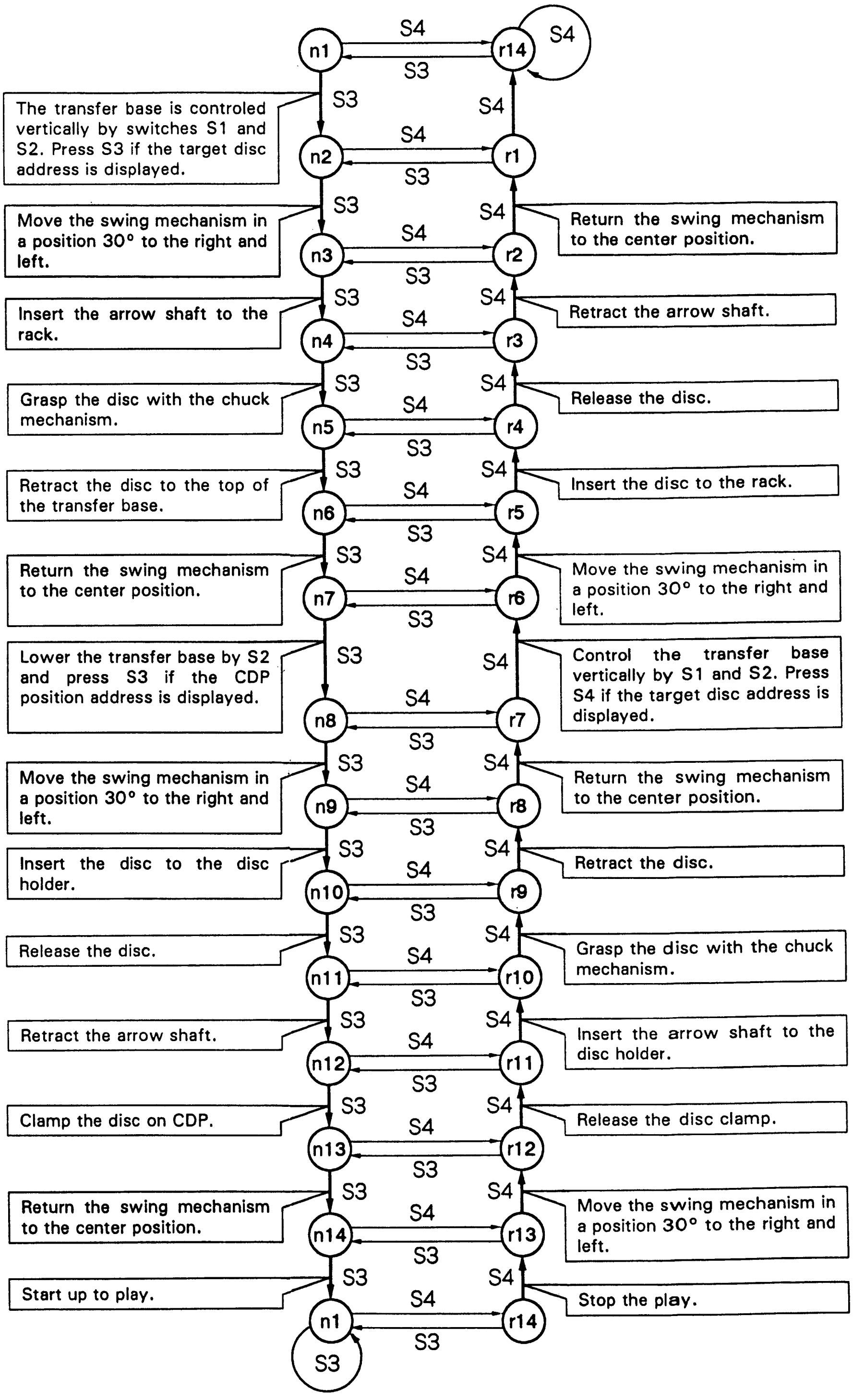


Fig. 4 The period lights.



The transfer base is controled vertically by switches S1 and S2. Press S3 if the target disc address is displayed.

Move the swing mechanism in a position 30° to the right and left.

Insert the arrow shaft to the rack.

Grasp the disc with the chuck mechanism.

Retract the disc to the top of the transfer base.

Return the swing mechanism to the center position.

Lower the transfer base by S2 and press S3 if the CDP position address is displayed.

Move the swing mechanism in a position 30° to the right and left.

Insert the disc to the disc holder.

Release the disc.

Retract the arrow shaft.

Clamp the disc on CDP.

Return the swing mechanism to the center position.

Start up to play.

Return the swing mechanism to the center position.

Retract the arrow shaft.

Release the disc.

Insert the disc to the rack.

Move the swing mechanism in a position 30° to the right and left.

Control the transfer base vertically by S1 and S2. Press S4 if the target disc address is displayed.

Return the swing mechanism to the center position.

Retract the disc.

Grasp the disc with the chuck mechanism.

Insert the arrow shaft to the disc holder.

Release the disc clamp.

Move the swing mechanism in a position 30° to the right and left.

Stop the play.

Note : CDP is an abbreviation for CD player.

Table 9 Manual Mode Operation sequences

Operation	S1−ON	S2−ON	LED Displays
Vertical	Shift to upper direction.	Shift to lower direction.	The current address
Swing	Shift to right direction.	Shift to left direction.	Flash when the mechanism is not on the correct position.
Slide	Forward	Backward	
Chuck	Close	Open	
Clamp	* Clockwise turn	* Counterclockwise turn	

* Refer to Table 8.

Table 10−1 Tactile Switch Functions

Operation	S3−ON	S4−ON
Disc setup	After the step operation is completed, a value of one is added to the sequence number.	A value of one is subtracted from the sequence number and the operation condition is changed to [Disc Return].
Disc return	A value of one is added to the sequence number and the operation condition is changed to [Disc Setup].	After the step operation is completed, a value of one is subtracted from the sequence number.

Table 10−2 Tactile Switch Functions

Operation	Sequence	Operation Contents	Explanation
Disc setup	n 1	Vertical	The transfer base is controled vertically by switches S1 and S2. Press S3 if the target disc address is displayed.
	n 2	Swing	Move the swing mechanism in a position 30° to the right and left.
	n 3	Slide	Insert the arrow shaft.
	n 4	Chuck	Grasp the disc with the chuck mechanism.
	n 5	Slide	Retract the disc to the top of the transfer base.
	n 6	Swing	Return the swing mechanism to the center position.
	n 7	Vertical	Lower the transfer base by S2 and press S3 if the CDP position address is displayed.
	n 8	Swing	Move the swing mechanism in a position 30° to the right and left.
	n 9	Slide	Insert the disc to the disc holder.
	n10	Chuck	Release the disc.
	n11	Slide	Retract the arrow shaft.
	n12	Clamp	Clamp the disc on CDP.
	n13	Swing	Return the swing mechanism to the center position.
Disc return	r14	Vertical	Stop the play.
	r13	Swing	Move the swing mechanism in a position 30° to the right and left.
	r12	Clamp	Release the disc clamp.
	r11	Slide	Insert the arrow shaft to the disc holder.
	r10	Chuck	Grasp the disc with the chuck mechanism.
	r 9	Slide	Retract the disc.
	r 8	Swing	Return the swing mechanism to the center position.
	r 7	Vertical	Control the transfer base vertically by S1 and S2. Press S4 if the target disc address is displayed.
	r 6	Swing	Move the swing mechanism in a position 30° to the right and left.
	r 5	Slide	Insert the disc to the rack.
	r 4	Chuck	Release the disc.
	r 3	Slide	Retract the arrow shaft.
	r 2	Swing	Return the swing mechanism to the center position.

Table 11 Operation Sequence Chart

③ Error History Reference Mode

Up to eight error events can be recorded. The most recent event is recorded as number one. When the number of events exceeds eight, the oldest one is shifted out (deleted.)

1) Start-up Operation

While pressing switches S3 and S4, turn the power switch ON. The LED display flashes [E − −] slowly.

2) Usage

Operations are performed according to the functions shown in Table 12.

Switch	Function	Contents
S1	One is added to the error history pointer.	The error history pointer (1 to 8) is displayed when the switch is pressed. The error number (Table 13) is displayed when the switch is released.
S2	One is subtracted from the error history pointer.	The error history pointer (1 to 8) is displayed when the switch is pressed. The error number (Table 13) is displayed when the switch is released.
S3	Call the detailed error data. (Invalid when detailed error data was not recorded.)	The vertical address where the error occurred is displayed while the switch is pressed. (The disc address is displayed if a CDP error occurs.) When the switch is released, the sequence number when the error occurred is displayed. (The CD player error message is displayed if a CDP error occurs.) * If switch S3 is pressed again, the error history pointer and the error number display returns.
S4	Clear the error history.	Press this switch more than four seconds, then the flash cycle speed increases and the entire error history is cleared.

Note : CDP is an abbreviation for CD player.

Table 12

Error No.	Error Name	Contents
E71	PLAYER STATUS ERROR ※ Only detected in screening mode.	The CDP does not enter the correct operation status. ● An error occurs when the anticipated operation status is not set even after waiting approximately five minutes.
E72	TOC READ ERROR ※ Only detected in screening mode.	The TOC data of the disc was not be able to read. ● The disc is abnormal or the CDP is malfunctioning.
E81	NO PLAYER AVAILABLE	There is no CDP available. ● Both CDPs are checked in the initial setting mode. If both represent E89, then it turns to E81.
E82	BUFFER OVERFLOW	The data from the CDP was not processed. ● The decoding process of the data from the CDP was not completed quickly enough. ● But receive buffer is auto maticaly cleared communicates and the set continues to work.
E83 E84	PLAYER ERROR PROTOCOL ERROR ※ Only detected in screening mode.	The disc cannot be played normally. The CDP communication is not operating normally. ● This error does not in the normal mode because the host computer communicates directly with the CDP. ● The error code from the CDP is recorded as the detailed error data. (Refer to Table 14.)
E85	BUFFER OVERFLOW	The data from the host was not processed. ● The decoding process of the data from the host was not completed in time or the length of the command line was too long. ● A value of E00 is returned to the host.

Error No.	Error Name	Contents
E86	NOT SAFE TO SWING	The condition for the swing operation is not ensured. ● An attempt was made to perform a swing operation in [n8], but the clamper was not open completely.
E87	NOT SAFE TO SLIDE	The condition for the slide operation is not ensured. ● An attempt was made to perform a slide operation in [n9] or [r11], but the clamper was not open completely. ● The swing operation is not performed correctly.
E88	VERSION MISMATCH	The CDP microprocessor program did not match the expected version. ● Load the correct version.
E89	NO RESPONSE	A transmission was performed for the CDP but an answer was not returned within 250 ms. ● The CDP unit is not installed. ● The communication line is not connected correctly. ● Control was performed by the incorrect communication mode.
E90	BACKUP DATA IS INCORRECT.	The contents of the backup memory are corrupted. ● Special bytes of memory are checked during the initial setting. If the contents have been changed, clear all backed up data. The error was recorded after this processing was completed. ● The super capacitor is faulty. ● The microprocessor was not inserted correctly. ● The player is not powered for a long period of time (more than a month).
E91	MECHANICAL TIMEOUT ※ The sequence number is recorded as detailed error data.	The operation was not completed even if the maximum permissive time was exceeded. ● The maximum permissive times for each mechanism are as follows. Vertical operation : 20.0 seconds Swing operation : 3.0 seconds Slide operation : 3.0 seconds Chuck operation : 1.5 seconds Clamp operation : 2.0 seconds ● Suspected causes Motor or Driver is faulty. Position sensors are faulty. Overload due to faulty operation position. ● If it occurs in [n3], it returns to [r1] and tries this step again. The value E91 remains in the error history. If an error occurs again, operation stops.
E92	THE DISC CANNOT CHUCK.	The disc was not be able to pick up. ● If it occurs in [n5], operation does not stop, because the disc may not enter the rack correctly. ● If it occurs in [r9], a retry operation is attempted up to a maximum of four times. If the operation fails five times consecutively, this is regarded as an error and operation stops. This is recorded as only one error.
E93	RETURN ADDRESS IS LOST.	The address of the disc on the transfer base is not known. ● The contents of memory are faulty. (An error code of E90 is recorded also.) ● The disc presence sensor is faulty.
E94	VERTICAL MOVING NG.	The vertical motor locks for more than 10 seconds. ● The mechanism sticks into the top or bottom end because the vertical address was not read correctly. ● The motor control circuit is faulty. ※ The address in the detailed error data was the address currently read by the microprocessor. Compare the actual address.

Error No.	Error Name	Contents
E95	SOFTWARE TROUBLE	It was determined that a dangerous condition occurred because the program malfunctioned. ● A stack overflow occurred when there were numerous errors.

※ When an error occurred in the screening mode, it does not reset in the initial setting mode even when the power is turned on again (error lock). In that case, enter to the error history mode, after removing or repairing the cause of the error. Press switch S4. The error number that is displayed is cleared.

Note : CDP is an abbreviation for CD player.

Table 13 Error Number Chart

Error No.	Error Name	Contents
00E	COMMUNICATION ERROR	Communication line error ● Framing error ● Buffer overflow
04E	FEATURE NOT AVAILABLE	Attempt was made to execute unavailable feature. ● Incorrect command mnemonic. ● Not available in this mode.
06E	MISSING ARGUMENT	Required parameter is not specified.
11E	DISC NOT EXIST	No disc is mounted.
12E	ADDRESS ERROR	Search address cannot be found.
13E	DEFOCUSSING ERROR	Defocus occurred.
14E	SPINDLE UNLOCK	Spindle is unlocked.
96E	START-UP ERROR	Start-up operation cannot be performed.
99E	PLAYER PANIC	Unrecoverable error occurred in the player. ● Disc play cannot be continued. ● Player is not correctly connected.

Table 14 Player Error Messages

④ Player Address Setting Mode

When the unit is shipped from the factory, player address [1] is assigned to the left player and player address [2] is assigned to the right player. When a system is designed using two or more changers, the addresses of these players must differ. In this case, enter the player address setting mode and change the player addresses.

1. While pressing S1 and S3 simultaneously, turn the power switch ON. The left players address will be displayed in the following format. The address of the right player cannot be displayed. The address of the right player is set by adding one to the value of the left player.

   $\boxed{1}$ This is the factory setting.
   The setting can be changed to a maximum value of 98.

2. The numeric value can be changed by pressing switch S3 for the one's value and switch S2 for the 10's value. The brightness of the display decreases when the change operation starts.

   $\boxed{13}$ Left player [13],
   Right player [14]

3. If S4 (ENTER) is pressed, the player address that is displayed is recorded and the display brightness returns to the original level. When the number was 00 or 99, the brightness stays at the low level to indicate that the player address setting was not accepted.

⑤ Counter Read Mode

The number of mechanism operations is recorded in order to perform periodic maintenance of the mechanisms. The count corresponds to the number of times a disc was picked up from the disc rack. This is regarded as equivalent to the number of selections that were performed. Multiply the average performance time and calculate the player operation time. The operation time of both players cannot be calculated separately. The display is represented in the following formats.

--3	The high-order unit are displayed. The unit represents the number of 1,000's and the maximum value is 999.
020	The lower-order units are displayed. The unit represents the number of ones and the maximum value is 999. Three digits are always displayed.

1. If the power switch is turned ON while pressing switches S2 and S4 simultaneously, this mode is entered and the value of the high order digits is displayed.
2. If the buttons for S1 to S4 are pressed in any order, the low-order digits are displayed as long as the buttons are pressed. The high-order digits are displayed when the buttons are released.

⑥ Loop-back Test Mode

This mode is used to perform a hardware test of the communication interface. The RX and TX are looped at the external control terminal.

1. If the power switch is turned ON while pressing switches S2 and S3 simultaneously, this mode is entered and the following is displayed.

0-	The left digit of the display represents the low-order four bits of the ASCII code that is transmitted. A value of 30H is transmitted in the initial condition.

2. The right digit displays the low order 4 bits of the ASCII code that is input to RX. As a result, [0 − 0] is displayed if a serial control terminal is connected to produce a loop-back using the special short-circuited connector.
3. A value of one is added to the left digit if S1 is pressed. When the switch is released, a value of one is added to the ASCII code and then it is transmitted. The transmission and reception can be checked by performing this procedure from values of [0 − 0], [1 − 1], [2 − 2] to [F − F]. Data that is transmitted can be in the range from 30H to 5FH. When the host is connected, the corresponding ASCII code is transmitted to it.

※ Short-circuited connection for the loop-back.
Short pins 2 and 3 in the RS-232C cable. Short pins 2 and 3, 7 and 8 in the RS422A cable.

Note :
Check the RS422A and RS232C separately. If both connection terminals are short-circuited simultaneously, the display will not be correct.

⑦ Software Version Reference Mode

The software version of the programed system microprocessor can be verified in this mode.

1. If the power switch is turned ON while pressing switches S2 and S3 simultaneously, this mode is entered and the system microprocessor version is displayed as shown in the following format.

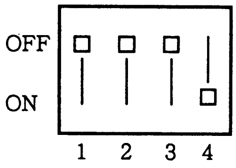
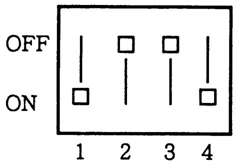
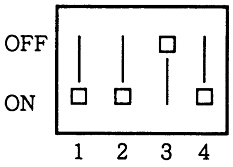
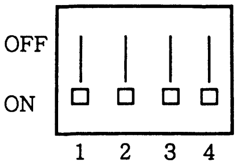
   4.13

2. If small changes are performed, a separate revision number is assigned to that version. When there is a revision number, the version number is displayed only while any button is being pressed and the revision number appears when the button is released.

⑧ Screening Mode

There is a special service mode called the screening mode. The mechanism can be operated automatically for a long period of time in a previously determined sequence in this mode. And there are four different types of disc accessing depending on the DIP switch-patterns.

So it is very important that the initial disc installing before entering this mode matches the DIP switch-patterns as shown in the following table and explanation. Otherwise, it may cause the mechanical mulfunctions. Be especially careful to use this mode.

DIP Switch Bit Pattern (S5)				
The number of required CDs.	8	4	300	4
The addresses to install them	#1 to #4 and #151 to #154	#1, #2 and #151, #152	#1 to #300 (All racks)	#3, #148 and #153, #298
Other disc racks	must be clear.	must be clear.	———	may be OK as they are.
After each play, the disc is returned to	another rack.	another rack.	original rack.	original rack.

Note :

- *During the screening operation, the number of screening operations is displayed on the LED. Numbers greater than 1,000 are indicated by the lighting patterns of the periods in the LED display as shown below.*

  [0 0 0.] : 1,000
  [0 0. 0] : 2,000

- *When the number of operations reaches 2048, it stops. The LED displays [End] when the performance is completed and the transfer base assembly stops at the shipping position. All errors are cleared at this time. The player address returns to the value that was set when the player was shipped from the factory.*
- *If an error occurs during screening, the LED alternately displays the error number, screening number and operation sequence when the error occurred.*

12. FOR KUC TYPE

NOTES:
- *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Parts marked by "◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*

CONTRAST OF MISCELLANEOUS PARTS

CAC – V3000/KUC and CAC – V3000/HEM have the same construction except for the following :

Mark	Symbol & Description	Part No.		Remarks
		CAC – V3000/HEM	CAC – V3000/KUC	
◉	SYPS unit	DWR1134	DWR1141	
◉	VCHS unit	DWS1169	....	
◉	DGIF unit	DWX1282	DWX1307	＊1
◉	MCDR unit	DWG1301	DWG1317	＊2
⚠	Power transformer (AH : 220 – 230, 240V)	DTT1074	....	
⚠	Power transformer (AK : 120V)	....	DTT1073	
⚠	Power transformer (CH : 220 – 230, 240V)	DTT1077	....	
⚠	Power transformer (CK : 120V)	....	DTT1076	
⚠	FU2, FU3 Fuse (T2AL250V)	REK – 103	....	
⚠	FU2, FU3 Fuse (3.15A/125V)	....	DEK1019	
⚠	FU4, FU9 Fuse (T800mAL250V)	REK – 099	....	
⚠	FU4, FU9 Fuse (1.25A/125V)	....	DEK1013	
⚠	FU5 Fuse (T5AL250V)	REK – 107	....	
⚠	FU5 Fuse (8A/125V)	....	DEK1025	
⚠	FU6 Fuse (T2.5AL250V)	REK – 104	....	
⚠	FU6 Fuse (4A/125V)	....	DEK1020	
⚠	FU7 Fuse (T1AL250V)	REK – 100	....	
⚠	FU7 Fuse (1.6A/125V)	....	DEK1015	
⚠	FU8 Fuse (T630mAL250V)	REK – 098	....	
⚠	FU8 Fuse (800mA/125V)	....	DEK1010	
⚠	FU10 Fuse (T2AL250V)	REK – 103	....	
⚠	FU10 Fuse (2.5A/125V)	....	DEK1017	
⚠	AC Power cord	ODG1003	DDG1057	
	AC Sub panel	DNC1244	DNC1243	
	Bolt	DBA1037	DBA1038	
	Packing case	DHG1386	DHG1387	
	Operating instructions (English)	....	DRB1093	
	Operating instructions (English, French, German, Italian, Spanish)	DRB1088	....	
	FUSE caution label	....	DRW1381	
	ICP caution label A	....	DRW1382	
	ICP caution label C	....	DRW1384	

＊1 : Although DGIF unit (DWX1307) and DGIF unit (DWX1282) are different in part number, they have the same service parts.
＊2 : Although MCDR unit (DWG1317) and MCDR unit (DWG1301) are different in part number, they have the same service parts.

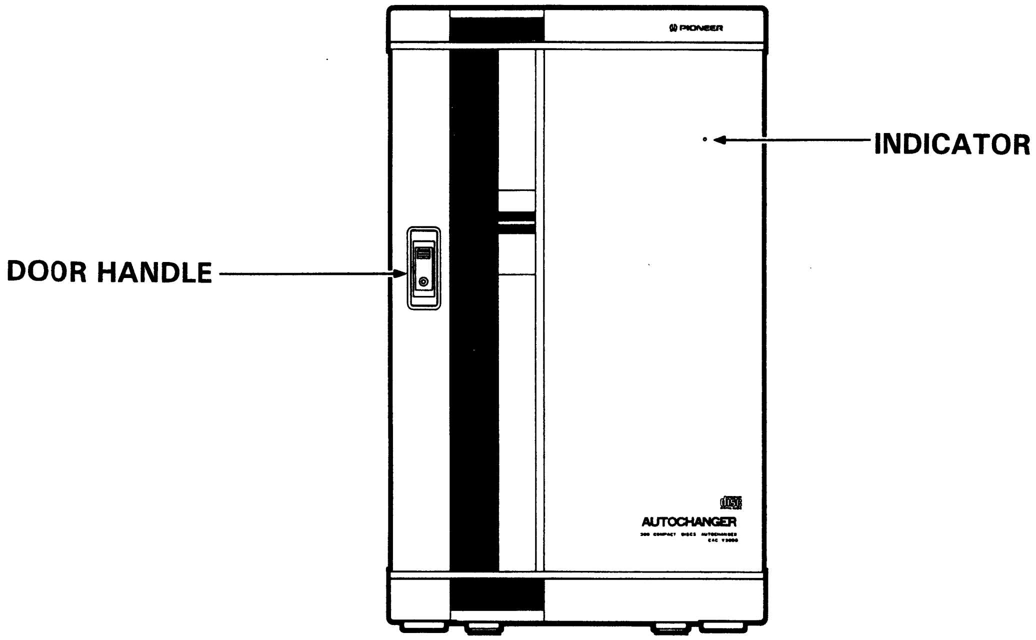
SYPS UNIT

SYPS unit (DWR1141) and SYPS unit (DWR1134) have the same construction except for the following :

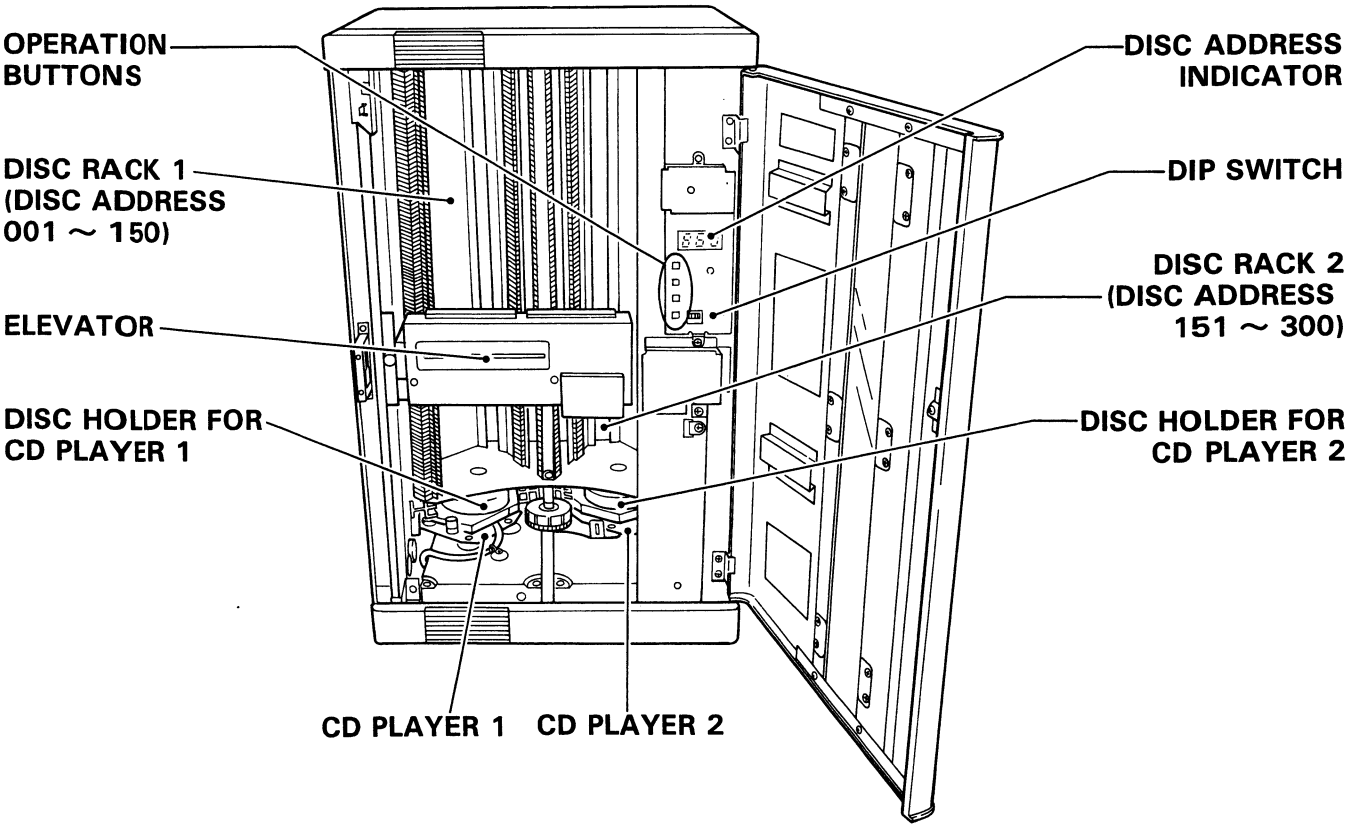
Mark	Symbol & Description	Part No.		Remarks
		DWR1134	DWR1141	
⚠	C601 – C603 (0.01)	VCG – 048	RCG – 009	

13. PANEL FACILITIES

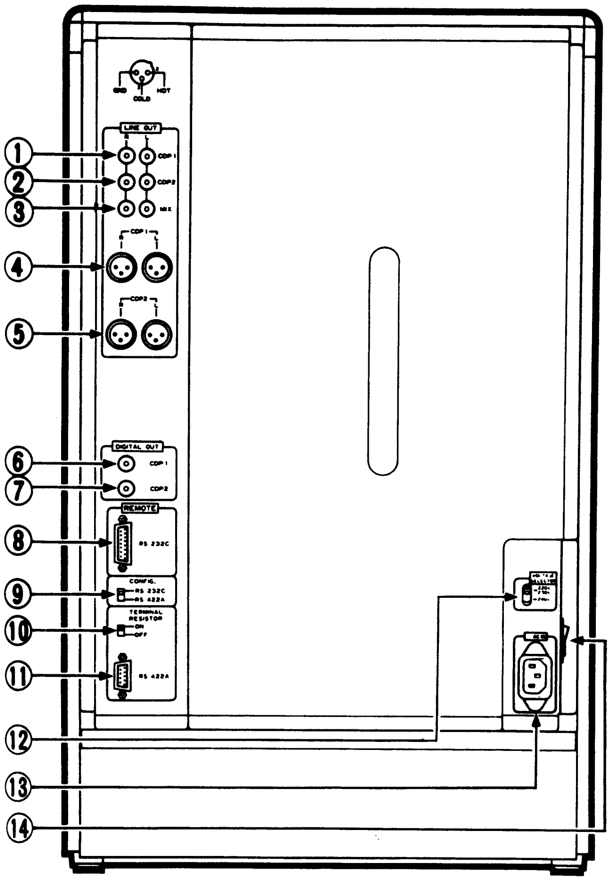
FRONT VIEW


INDICATOR
DOOR HANDLE
PIONEER
AUTOCHANGER

INSIDE VIEW


OPERATION BUTTONS
DISC RACK 1 (DISC ADDRESS 001 ~ 150)
ELEVATOR
DISC HOLDER FOR CD PLAYER 1
DISC ADDRESS INDICATOR
DIP SWITCH
DISC RACK 2 (DISC ADDRESS 151 ~ 300)
DISC HOLDER FOR CD PLAYER 2
CD PLAYER 1
CD PLAYER 2

REAR VIEW


①
②
③
④
⑤
⑥
⑦
⑧
⑨
⑩
⑪
⑫
⑬
⑭
GND
COLD
HOT
LINE OUT
CDP 1
CDP 2
MIX
DIGITAL OUT
REMOTE
RS 232C
CONFIG.
RS 232C
RS 422A
TERMINAL RESISTOR
ON
OFF
RS 422A

① LINE OUT CDP1 jacks (RCA pin-jack, unbalanced)
Outputs analog audio signals from CD player 1

② LINE OUT CDP2 jacks (RCA pin-jack, unbalanced)
Outputs analog audio signals from CD player 2

③ LINE OUT MIX jacks (RCA pin-jack, unbalanced)
Outputs analog signals by mixing audio signals from CD players 1 and 2

④ LINE OUT CDP1 jacks (XLR-3•32, balanced)
Outputs analog audio signals from CD player 1

⑤ LINE OUT CDP2 jacks (XLR-3•32, balanced)
Outputs analog audio signals from CD player 2

⑥ DIGITAL OUT CDP1 jack (RCA pin-jack, unbalanced)
Outputs digital audio signals from CD player 1

⑦ DIGITAL OUT CDP2 jack (RCA pin-jack, unbalanced)
Outputs digital audio signals from CD player 2

⑧ RS-232C connector
RS-232C interface for connection to a computer or controller. See page 10 for more details.

⑨ RS-232C/RS-422A switch
Switches the interface from RS-232C to RS-422A and vice versa

⑩ RS-422A TERMINAL RESISTOR switch
Switches input impedance. Turn to ON when you use RS-422A interface.

⑪ RS-422A connector
RS-422A interface for connection to a computer or controller. See page 10 for more details.

⑫ VOLTAGE SELECTOR switch
Switches the voltage from 220-230 V to 240 V and vice versa

⑬ ~ AC inlet

⑭ Power switch

14. SPECIFICATIONS

FOR HEM TYPE

General

System	CD auto changer
Power supply	AC 220 – 230/240 V, 50/60 Hz
Power consumption	64 W
Weight	28.5 kg
Dimensions	360 (W) x 360 (D) x 590 (H) mm
Allowable operating temperature range	+5 to +35°C
Allowable operating humidity range	5 to 90% (no condensation)
Storage temperature	−40 to +60°C

Discs

	12 cm CDs

Connection terminals

Players 1 and 2 unbalanced output	
Output level	2.2 ±0.5 Vrms
Output impedance	1 kΩ or lower
Signal-to-noise ratio	110 dB
Frequency response	20 Hz to 20 kHz ±0.5 dB
Distortion	0.007% at 1 kHz
Channel separation	103 dB
Remained noise	100 μVrms or less
Level difference between right and left	1.5 dB or less
Players 1 and 2 balanced output	
Output level	$+4^{+1.8}_{-2.2}$ dBm
Players 1 and 2 mix unbalanced output	
Output level	2.2 ±0.5 Vrms
Output impedance	1 kΩ or lower

Function

Disc storage	Max. 300 discs

Accessories

Audio cable (4 m)	2
Door key (for locking the front door)	2
Electrostatic charge removal sheet	1
Power cord	1
Operating Instructions	1

NOTE:
Specifications and design subject to possible modifications without notice, due to improvements.

FOR KUC TYPE

General

System	CD auto changer
Power supply	AC 120 V, 60 Hz
Power consumption	60 W
Weight	28.5 kg (62 lb 13oz)
Dimensions	360 (W) x 360 (D) x 590 (H) mm 14-3/16 (W) x 14-3/16 (D) x 23-1/4 (H) in
Allowable operating temperature range	+5 to +35°C (41 to 95°F)
Allowable operating humidity range	5 to 90% (no condensation)
Storage temperature	−40 to +60°C (−40 to 140°F)

Discs

	CD (5-inch only)

Connection terminals

Players 1 and 2 unbalanced output	
Output level	2.2 ±0.5 Vrms
Output impedance	1 kΩ or lower
Signal-to-noise ratio	110 dB
Frequency response	20 Hz to 20 kHz ±0.5 dB
Distortion	0.007% at 1 kHz
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Remained noise	100 μVrms or less
Level difference between right and left	1.5 dB or less
Players 1 and 2 balanced output	
Output level	$+4^{+1.8}_{-2.2}$ dBm
Players 1 and 2 mix unbalanced output	
Output level	2.2 ±0.5 Vrms
Output impedance	1 kΩ or lower

Function

Disc storage	Max. 300 discs

Accessories

Audio cable (13 feet)	2
Door key (for locking the front door)	2
Electrostatic charge removal sheet	1
Power cord	1
Operating Instructions	1

NOTE:
Specifications and design subject to possible modifications without notice, due to improvements.

Maintenance:
In order to ensure the save and correct function of this unit, we recommend regular maintenance. Extended service life can be expected if maintained properly.